FOGHORN

THE OFFICIAL NEWSLETTER OF THE **F**IRST **O**SBORNE **G**ROUP **FOG**

Volume 2 Number 7 Circulation ***6000*** April, 1983

CALENDAR

Under this heading you will find the listing of activities and events of affiliated member organization. If you want your group events listed here, send the date, time, place, contact name and phone in an envelope marked " CALENDAR " to P. O. Box 11683-A, Palo Alto, CA, 94306. Allow at least six weeks for publication. Listings are the responsibility of organization officers. *For a list of other groups, see "* ***CONTACTS*** *" later in this issue or in back issues starting January, 1983.*

Date	City	Chapter	Time	Address	Contact No.
Apr 7	Santa Clara CA	SC FOG	7:30pm	5201 Patrick Henry Dr.	408-947-1650
May 8	Miami FL	GCOUG	1:00pm	F.I.U Tamiami Campus, Bldg DM, Rm 100	305-255-7391
May 10	Las Vegas NV	VOG	7:00pm	Cannon Jr. HS, Eastern & Russell Avenues	702-293-3636
May 10	Vancouvr BC	VPCC	7:30pm	Hastings Community Ctr, 3096 E. Hastings	604-298-6990
May 10	Memphis TN	MOG	7:00pm	34th Fl, Clark Bldg, Fed. Express Conf. Rm.	901-797-6024
May 11	Wenatchee WA	WOG	7:00pm	1030 N. Wenatchee	509-884-3279
May 12	Davis CA	DOG	7:30pm	Davis Science Center, 525 'C' St	916-756-2967
May 12	Orlando FL	GOOUG	7:00pm	2904 E. Colonial Drive	305-898-5290
May 16	Raleigh NC	ROCC	7:30pm	128 Polk Hall, NC State University	919-787-7353
May 16	Detroit MI	DeFOG	7:00pm	CONFIRM — Ford EOB Bldg, Rotunda Dr, Dearborn	313-474-1342
May 19	Santa Clara CA	SC FOG	7:30pm	5201 Patrick Henry Dr.	408-947-1650
May 19	Cincinnati OH	COG	7:00pm	Central Trust Center, 5th & Main Streets	513-232-4076
May 19	Denver CO	DOG	8:00pm	Business Admin Bldg, Univ of Denver	303-934-1407
May 19	Orlando FL	GOOUG	7:00pm	2904 E. Colonial Drive	305-898-5290
May 21	Kenai AK	PenFOG	10:00am	Rm V111, Kenai Peninsula Comm. College	907-283-4950
May 26	San Francisco CA	SF FOG	7:30pm	St. Aidan's Church, Diamond Heights & Goldmine Dr.	415-921-0257
May 26	Orlando FL	GOOUG	7:00pm	2904 E. Colonial Drive	305-898-5290

PLEASE NOTE: *We now have a new (and much larger) post office box. Please use this new address for* ***ALL*** *mail from now on. In the May issue, we will change all of the address throughout the* ***FOGHORN****. The new box number came too late to make the changes.*

The new address is:

First Osborne Group (FOG)
P. O. Box 3474
Daly City, CA 94015-0474

The address label on this (and all future issues) has your membership-account number and expiration date on it. Please include this number in any correspondence.

The First Osborne Group (FOG) has been formed as a users' group for all persons who use or are interested in portable computers. Membership is available to any interested party whether or not they currently own a computer. The FOGHORN is published monthly by the First Osborne Group for its members. A subscription is included with membership in FOG: US — $24.00/yr.; elsewhere — add $6.00 for postage. Address all inquiries to FOG, P. O. Box 11683-A, Palo Alto, CA, 94306.

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President/Founder .... Frank Morton
Finance Office .... Leo Grandi
Executive Director .... Gale P. Rhoades
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Corporate Librarian .... Jim Woolley
Legal Counsels .... Jim Schenkel and Steve Von Till
Editor, **FOGHORN** .... David M. Oates
Technical Counsel .... Byron A. McKay
Corporate Secy .... Bob Kavinoky

Submissions

All articles, letters-to-the-editor, member announcements, classified ads, etc., should be WordStar files, "D" mode (except for program listings), formatted to 65 columns, with ***paragraphs indented (5) spaces, NO PRINT COMMANDS, and Hyphen-Help OFF.*** They should be on (Osborne 1 readable) diskettes. The submissions can be sent in the mail (to P. O. Box 11683-A, Palo Alto, CA, 94306), copied to a FOG diskette at a Santa Clara FOG meeting, delivered (by arrangement) to a FOG officer, or sent by modem to the editor (408-249-5223) or other officer of FOG. "By Modem" is by far the most convenient method. If you don't have a modem, get together with a friend who does and send your file. It will be a fun experience.

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Commercial Advertising

Commercial ads can either be submitted as document files, using the same parameters as those listed for articles etc., above or as camera ready copy. If you submit a full page ad on disk, use the Wordstar default margins (55 lines, 70 columns). Half page ads are 27 lines by 70 columns or 55 lines by 35 columns.

Size limitations for camera ready art are as follows:

full page: 7" x 9.5"
half page: 3.5" x 9.5" or 7" x 4.75"
quarter page: 4.75" X 3.5"

Rates, effective with the March issue are:

$270/full page, $150/half page, $105/quarter page

For advertisers who wish to run ads in three sequential issues, a special rate is available. Three months at the rate in effect at the time the order is placed and paid in full providing the ads are run in the subsequent three issues. The Board of Trustees will be reviewing the rates monthly and increasing them as the membership grows.

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Submission Deadlines

Advertising material is due two months in advance of the month of publication. (June 1st for the August issue). No exceptions will be made.

Other material is due on or before the first of the month preceeding the month of publication (June 1st for the July issue). Articles which are not month-specific may be submitted at any time. Please, avoid the deadline rush; contribute early.

These deadlines may be moved up so watch this column for changes in the policy.

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Back Issues — Reprints

Reprints of back issues may be ordered. We ask for a donation of at least $1.50 per issue to cover reprint and mailing costs. Additional donations will be gratefully accepted.

All issues are available. When we run out of copies from the original printing, we have more printed. Not all issues are of value to new members. Vol. 1 No. 1 (October, 1981) was primarily a greeting and a plea for help in getting this group going. Vol. 2 No. 3 (December, 1982) was a 2 page issue with holiday greetings and an advertisement for Super Graphics. Mailed with this issue was a copy of the original bylaws which have since been modified several times.

There were 11 issues in Volume 1 since we put out a combined issue for June and July, 1982. For those who are attempting to determine which copies from Vol. 1 are of interest, Vol. 2, No. 2 (Nov, 1982) has a partial index for Vol. 1.

Mark envelope " BACK ISSUE REQUEST " and include your account-membership number. Please send the order to P. O. Box 3051, Daly City, CA, 94015. Orders are shipped once a week. The index to the previous year is published in the November (#2) issue.

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Copies of Library Disks

FOG members may purchase copies of the library disks from FOG if the copies cannot be obtained through their local group. Individual disks are $5.00 each. Bulk orders or 10 or more disks earn a discount of $1.00 per disk. ***Return handling charges are $5.00 per order or address.*** Orders will be shipped within a week of receipt of the order when possible.

Please be sure to include your account-membership number.

For a listing of the programs and files in the library, consult the library column in each issue of Vol. 2 (except No. 3 — December, 1982). The section of the library called -FOG/LIB includes both Jim Woolley's material from the library column and a catalog program which lists the name and disk location of each program (but no descriptions).

Affiliated members organizations may participate in a monthly update service. Only the librarian of an affiliated member organization may make arrangements to participate in this plan. Contact Gale Rhoades at P. O. Box 3051, Daly City, CA, 94015 (phone 415-756-0821) for further details.

Jim Woolley has been adding approximately 10 disks per month to the library. He issues the new disks on the 3rd Thurs. of each month at the Santa Clara FOG meetings. Shipments to participants in the monthly update service will be made the following week. Jim does not plan to add any disks in April.

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Rebates to Affiliated Member Organizations

Rebates of 25% of the base membership rate ($24.00) will be made to Affiliated Member Organization on behalf of eligible members. To be eligible for the rebate, the name of the chapter MUST be on the membership form (or check) when the yearly dues (new or renewal) are paid.

No rebates will be made until the Affiliated Member Organization is formally approved by the Board of Trustees.

Application for Affiliated Member Organization status must be made in writing and must be accompanied by a list of the officer — names and addresses (at least three) and a signed copy of the group bylaws.

It is not necessary that a group be affiliated when the member pays the yearly dues and specifies affiliation for that member to be eligible for the rebate.

Rebates will be paid within two weeks of the Board meeting at which the chapter receives its charter. Subsequent payments will be made on a quarterly basis. Refer all questions about rebates to Gale Rhoades at P. O. Box 3051, Daly City, CA, 94015.

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Change of Address

To request a change of address, send the label from a recent **FOGHORN** together with the new address either in an envelope marked " CHANGE OF ADDRESS " or on a Postal Change of Address Card to P. O. Box 11683-A, Palo Alto, CA, 94306. Please allow at least 30 days for a change of address to be effective. It is essential that you include your account-membership number in all correspondence.

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FROM THE FOG

At the Faire!

by Frank Morton

Well, it's over for another year (the FAIRE, that is). If you missed it, you missed another big one! An unconfirmed rumor had attendance over 60,000 for the three days. They even had exhibitors booths set up in the loading dock areas. Next year it will include another building several blocks away. Osborne Computer Corporation had the same location as last year; center main floor of the Civic Auditorium (a good spot), and we had the same table, straight out a side door in an adjoining hallway. It works out very well; we can direct people to the OCC booth and visa-versa. This year we were both referring OS1 owners to the OCC Support room upstairs in 203. They had literature for hook-ups to common printers, technical personnel on hand, and a listing of the status of all upgrades being done at the factory. It was very helpful and well received by all who stopped by to check it out.

Everyone was waiting for a rumored big announcement from OCC, ... but it didn't happen! Their booth was redesigned and looked very good, when you could see it (it was swamped with people most of the time). Although there was a lot of displays and much activity, the big surprise was that there was not really much of anything NEW at the Faire which worked. One dealer had a "C Drive" for the Osborne, which looks promising but was not working. It is a 128K (I think) RAM card which fits in one pocket and is powered from the Battery socket. I think it is intended to act like a semi-disk, but we will have to get more information on it for you later. There was a really portable portable from San Juan Capistrano, CA named the Athena I. It is battery powered with a 4 line LCD display, expands from 128K to 1024K RAM, and starts slightly above $3000. XCOMP of San Diego had "The Toaster" with two removable 3.9", 5 Meg. H.D. cartridges working with Osborne, Kaypro, and others ($2795 plus cartridges at $75).

The FOG table was taking new membership registrations, had some library diskettes available, and was also selling brand new FOG T-Shirts imprinted with our Corporate Trademark. They are made from Hanes medium weight 100% cotton T-Shirts in a light blue color; very good quality. They are available in Small, Medium, Large, and Extra-Large Men's sizes with enough material to allow for shrinkage. We gave one to each member who put in a shift manning the table. They each sell for $8.00 to a member and $10.00 to non-members, tax included. We still have some of these distinctive, attractive shirts available while the supply lasts. Add $1.00 for shipping and handling; or buy two at $15.00 plus $1.00. It is a great way to spread the word about FOG (and of course will also help the treasury).

The Election has been successfully completed. MANY THANKS for your participation and support. The election results are indicated elsewhere in this issue of the **FOGHORN**, but there are several comments to be made. I have been told by reliable sources that mail participation and response to any request of any kind no matter how important the issue is seldom more than 10% at best; 20% would be outstanding, and anything more than that would be unbelievable! Well, your response of 1064 ballots was over 26% of the 4061 membership! We wanted this to be a democratic organization to be run to your satisfaction and it appears to me that your voting of 80% or more for myself, David Oates, John Gaudio, and Gale Rhoades is a clear mandate for the way we have been trying to operate FOG for you. I greatly appreciate this mandate and accept it as a challenge to streamline and improve our service to you. The 97% ratification of the BYLAWS was also most gratifying. You should notice that we now have out of the area Board representation in the form of John Gaudio from Denver and Jack Brown from Vancouver B.C., our first International Board member!

We apologize if there was any confusion associated with the Ballot, although most seemed to feel that if the instructions were read carefully the intent was clear. There probably would have been less questions if we had not included the amendments to the BYLAWS, and if we had put the Ballot on one side, with the PROXY statement on the opposite side of the Ballot. Rest assured, we have a very large "lessons learned" file which we intend to start implementing immediately. Number one in priority is to start planning a lot sooner! We attempted to get all **FOGHORNs** through the March issue out in time before the Faire and General Meeting, but Murphy's Law would not be denied.

As you now know from the March issue, we had to change the date and time of the meeting due to lack of available space. Obviously our preplanning was not the best. Due to this and other factors we need to assess, there were very few persons actually at the General Meeting. We had up to date information at the FOG table in the Faire, and for those of you who didn't make it to the meeting — YOU BLEW IT! We did not get confirmation until a few days before the Faire, but BOTH Adam Osborne and Robert Jaunich (the new President of OCC) did take the time to come over and speak at the meeting!

Dr. Osborne apologized for those who had to wait 5 weeks for their 2 week DD & 80 col upgrades. He explained that the major problem was too many sales of OS1s. Their orders for December were 2.5 times the level for September. In January they were able to ship only 40% of the Domestic orders. In February they got up to 80%, and it wasn't until mid-March that they could balance shipments with orders. The problem with such rapid growth is balancing inventories, demand, finances, etc. To build lots of computers you have to have a big inventory of parts. If you buy too many parts, you wind up with lots of parts and no cash. If you protect your cash position and people want more computers than you can build, Dealers are screaming for more computers while existing owners are very legitimately wanting upgrades and complaining they cannot do without their machines for 5 weeks! These are normal problems for a Start-Up company, but it was obvious that their growth was here to stay and it was essential that they change from a Start-Up to an Established Business with the kind of experienced management that is required to resolve these endless problems. The real solution was to put in place a management team that knows how to cope. That is what he started to do last summer. It culminated with his hiring Bob Jaunich to come into the company as President.

Because of Mr. Jaunich's success at Shasta and subsequent promotions in Consolidated Foods, it took some time to get him for OCC. Adam said it became obvious that he had made the right choice when Industry Week magazine recently chose Bob Jaunich as one of the "fastest rising bright young executives in the country today", and the only one so selected from the Bay Area! Adam said: "We need him in the worst way because simply the micro-computer by 1985 or 86 is going to be the electronic business machine of the 80s. The companies that survive at that time are those that know how to build high quality, high volume, at low cost; and if you want to be in that group, you better be BIG! So OCC has to keep growing — but it has to be a controlled growth. That is what Bob is now doing; he is putting into place the team of management that is needed to continue the growth. OCC now has 800 employees and growing, volumes are going up, and everything that goes with it are getting more complex." With that he introduced Bob Jaunich to make a statement before they both answer some questions.

Bob indicated that OCC is doing about 25% of their business outside of the U.S. and that Adam is very well known outside the U.S. as well as inside. They intend to use that international recognition of Adam. Bob stated: "One of the objectives I have is to not change the character of the Company." He said there are not many Corporations in the U.S. who can claim both the revenues increase they have had and also the very enthusiastic and supportative User Groups. He thinks so many good things have happened that it is his intent to preserve the "good part of the good, while deleting the bad part of what comes with rapid growth." He plans to "seed some new managers at the top". This should have two benefits: 1) it will put OCC in a better position to put their appetite and desire to help in line with their ability to help or make their ability to deliver closer to what they actually commit to, and 2) it will help further develop the infrastructure of the corporation so they can build a culture in the company where the young people who have the enthusiasm can couple with experienced managers who can help the young people develop their managerial skills. He feels that the challenge is to do that without destroying the character of the company. He commented on the positive force from the overwhelming support of the Osborne Users Group.

The first audience member commented on his appreciation for OCC bringing the Support Group to the Faire. R.J. replyed he was delighted to overhear that "..this is the second introduction that Adam has had at the W.C.C. Faire — the first was the Osborne 1 and now he is finally introducing some customer support."

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Some of the questions and answers that followed included:

Q. When will we get the new machine?

A.O. *You will get the new machine about one day after we announce it! Let me tell you that one of the things we are looking at is that we make sure that people don't suddenly find they are holding something which is not worth having any more... We do try very hard with our introduction program to take into account the existing user base as well as looking for the future and the challenges that we face with competitors now that they have spotted the fact that we are onto something.*

Q. What happened to the initial public offering that was scheduled for March, and when will it be offered?

R.J. *There were comments to that effect in the paper, but they did not come from Osborne. We have been investigating methods of raising cash and there is some expectation that there may be at some point a public offerring but the timing and nature of that at this point are really quite speculative. We have not at this point filed a prospectus. We are in no position to say it is going to occurr within any specific time span of the next 30 to 240 or more days from now.*

Q. Would you comment on the relationship between FOG and OCC?

R.J. *We are wrestling with that. We receive 5000 telephone calls a day. How many are trying and don't get through? Communications are very important. We are trying to evaluate — what kind of support might logically come from a Users Group, what kind of support should consumers expect from their dealers, and what kind of support should the manufacturer provide? Research will be done to determine what current and prospective users might expect from these three sources. We won't really have an answer on that for about six months.*

A.O. *One overall comment is that we totally support the idea of User Groups. We think that User Groups are critical to the success of the company. I think that it is extremely important that we work very closely together while maintaining our independence. It is important that the User Groups be a function of the users; that you control your organization, and that we simply cooperate very closely.*

Q. What about the p-System; will we be getting it?

A.O. *The UCSD p-System doesn't yet work. IBM-PC went ahead and shipped it and they recalled it. We never bothered to ship it. If you have Double Density you will get p-System, but only when it works.*

Q. What about Upgrade kits for the Dealers?

R.J. *We are shipping some now — we don't know where your dealer is.*

A.O. *I would say there is going to be some significant number of them by late April. What we are doing at the moment is cleaning out the backlog of all the machines in. We are then starting to take machines into the company again. But in general we are doing all of the old ones, and in general are letting the dealers take care of all of the newer ones. For them it is a fairly easy upgrade. Because of shortage of hardware the dealers are unlikey to see a lot of upgrade kits before late April.*

There were many other questions and answers, but I've tried to select the ones of most interest for the moment.

One last bit From the FOG. PLEASE help us to support your Local FOG groups! Gale has mailed renewal notices with forms to fill out. If you are renewing, have recently renewed, or are sending in new applications — indicate your Local affiliation so that the group of your choice can get the benefit of the Rebate! For example; if you regularly attend meetings at the DYSAN Auditorium in Santa Clara and do not have a profound reason for choosing another Group, indicate that you are a part of the Santa Clara (called First FOG of Silicon Valley) Group! We want to help support your Local group, but we want to give you the freedom to designate which Group you want that to be!

FOG Election Results

At the time of the election, there were 4061 members eligible to vote in the election. A total of 1064 ballots were counted. The Bylaws passed — 1028 voted in favor of ratification, 14 were against ratification, and 22 abstained from the question.

In addition to the 16 nominees on the ballot, three more were nominated from the floor during the meeting. The ten nominees receiving the most votes were elected to the Board of Trustees. They will elect the officers for the coming year at their first meeting.

Below is a list of all nominees and the number of votes which they received. The home city of each of the new Trustees is also listed.

1.	Frank Morton — (Palo Alto, CA)	952
2.	David Oates — (San Jose, CA)	950
3.	John Gaudio — (Denver, CO)	915
4.	Gale Rhoades — (Daly City, CA)	847
5.	Leo Grandi — (Belmont, CA)	840
6.	Jim Schenkel — (San Francisco, CA)	771
7.	Reuben Sand — (San Mateo, CA)	762
8.	Robert Kavinoky — (Palo Alto, CA)	698
9.	Jack Brown — (Vancouver, BC)	658
10.	Fran Weber — (Oakland,CA)	465
11.	R. Hunter Morey	426
12.	Steve Von Till	357
13.	Craig Chun	353
14.	Elna Tymes	315
15.	James Lantz	281
16.	Scott Rainey	278
17.	Peter Simon	132
18.	Austin Smith	27
19.	Simon Kisch	2

1st FOG of Silicon Valley

by Elna Tymes, President

We are the local group for Silicon Valley, and have taken over the local operational functions of FOG. This includes the meetings in Santa Clara, plus other things we dream up. It does not include responsiblilty for the **FOGHORN**, the FOG treasury, or most of the regional, national or international functions FOG currently performs.

Among the services we propose to offer our members are reduced rate training sessions on WordStar, SuperCalc, dBase II, MBASIC and CBASIC, Assembly language and other topics of interest. We are looking at group-rate discounts on products, setting up a hotline, and offering a free printed and annotated index of the FOG library to those attending our meetings.

If you wish to become a (paid) instructor for Silicon Valley FOG, please send or give me a proposal with course outline, intended level (beginner, advanced), your name, address and phone number, and a brief resume describing your qualifications.

Elna R. Tymes
4018 Ben Lomond Dr.
Palo Alto, CA 94306

To be come a member of our local group, simply write or call Gale Rhoades (her address and phone number are on p. 2) and give her your membership number (on your **FOGHORN** label) and the local group with which you wish to affiliate.

LETTERS

MBASIC /F:, /M:, AND /S:

In answer to the inquiry brought up in the November issue of **FOGHORN** by Dwight Baker of So. Dartmouth, MA, the /F:, /M:, and the /S: are options that may be added at the time a BASIC file or, if using the SUBMIT facility of CP/M a number of BASIC files are being loaded and run.

The explanation I found is explained in the old (and original) stand-alone BASIC-80 Reference Manual that I got along with the purchase of my OS1 in December of '81; specifically, in Appendix D entitled "BASIC-80 with the CP/M Operating System."

I hope this is of some value to Dwight and others.

If these options are used, the format of the command line is:

```
A>MBASIC [<filename>][/F:<number of files>][/M:<highest memory
location>][/S:<maximum record size>]
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If /F:<number of files> is present, it sets the number of disk data files that may be open at any one time during the execution of a BASIC program. Each file data block allocated in this fashion requires 166 bytes of memory. If the /F option is omitted, the number of files defaults to 3. (Writer's note: I suspect that this may have something to do with a comment in Bradley S. Albom's **FOGHORN *SOFTWARE HELP*** column in the November issue where "a reference to any file number greater than 3 produces a Bad file number error.")

The /M:<highest memory location> option sets the highest memory location that will be used by MBASIC. In some cases it is desirable to set the amount of memory well below the CP/M's FDOS to reserve space for assembly language routines. In all cases, <highest memory location> should be below the start of FDOS (whose address is contained in locations 6 and 7). If the /M option is omitted, all memory up to the start of FDOS is used.

/S:<maximum record size> may be added at the end of the command line to set the maximum record size for use with random files. The default record size is 128 bytes.

NOTE

<number of files>, <highest memory location>, and <maximum record size> are numbers that may be either decimal, octal (preceded by &O) or hexadecimal (preceded by &H).

Examples:

A>MBASIC PAYROLL.BAS	Use all memory and 3 files, load and execute PAYROLL.BAS.
A>MBASIC INVENT/F:6	Use all memory and 6 files, load and execute INVENT.BAS.
A>MBASIC /M:32768	Use first 32k of memory and 3 files.
A>MBASIC DATACK/F:2/M:&H9000	Use first 36k of memory, 2 files, & execute DATACK.BAS.

Carl J. Warner
Beaverton, OR

[*I know, you've seen this question answered many times before. But, Carl did such a fine job and sometimes seeing something stated slightly differently makes it more understandable .... David*]

* * *

A Maltron Keyboard, A Terminal and My Osborne 1

As a non-programmer and a new Osborne 1 owner, I am having difficulty with a personal project of mine. I have imported a Maltron computer keyboard from England and have interfaced it with a Volker-Craig VC404 terminal. I had the understanding from my Osborne dealer that interfacing the terminal with the Osborne 1 would not be a problem. Such is not the case! On page 45 of the June/July 1982 issue of the **Portable Companion**, mention is made that a group of Osborne owners had wanted to hook a terminal up to the serial port. My aim is to be able to plug the terminal into the serial port and with a modified CP/M Operating System, have the terminal take over the console I/O completely.

I hope that you can put me in touch with someone who has already solved my problem and who would be willing to share their knowledge and experience. I have a copy of the VC404 ASCII Encoding Chart to provide information about the terminal. I would accept a collect phone call from anyone who can assist me. My home number is 403-271-1492 and my office number is 403-253-1116.

Mel Kyle
Calgary, Alta
CANADA

* * *

Questions, I've Got Questions...

There are a few questions which constantly recur.

1. Where is a FOG Users library nearby, or how do I get copies of the programs mentioned, conveniently?

[*Read the "Library Copies" on pg. 2, **FOGHORN** .... David*]

2. According to the **User's Reference Manual** and CP/M manuals, giving a file the attribute $SYS (using STAT.COM) should make it available to all USERs. This does not work on either of my Osbornes.
3. There appears to be a bug in my version of Disk Doctor. If the display format is set for other than 'S' (sector) and Ward A is selected, then in addition to erasing and verifying the inactive sectors, the program also wipes out a good fraction of the assigned (and active) sectors. I have written to OCC about this. Perhaps you get better response living nearby and knowing the personnel, but my response has been ZERO.
4. I have made the smooth scrolling modifications to my version of WordStar (2.26) and all seems to do well, except that I cannot select a line length other than 128. According to the WordStar Manual (which OCC use to distribute, and which is far more complete than the User's Reference Manual) the screen pattern indicates an erroneous cursor positioning routine. Has anyone else had this problem, and how have they solved it?

I bought the Osborne to support my consulting in scientific and engineering problems [and] for this it has worked out excellently. Most of my programming is done in Fortran (and Ratfor). However, some file comparison and checksumming routines would be very helpful.

Robert H. Sherman
Los Alamos, NM

* * *

Screen Print

Here is a short, MBasic, subroutine which users may add to their programs to give screen print capabilities. I have found the subroutine especially useful for printing graphs generated by programs.

Lines 1 through 3 put something on the screen for the subroutine to print. Lines 10 through 60 can read each byte of the video memory, beginning with 61440. The number of lines to be read is controlled by 'I' in line 30; the width of each line that is read can be changed by setting 'X', also in line 30. The subroutine prints the character shown on the display until a graphics character is reached, then it prints an asterisk. The character printed by the line printer can be changed by changing the character in J$, again in line 30. The 'resolution' of the attached prints is so low because of the spacing in line 1; the resolution can be increased by DELeting the STEP 3 so that every byte is filled. I've renumbered the subroutine and then appended it to existing programs with appropriate GOSUBs and RETURNs. By the way, I have my system hooked to an Okidata 82A printer.

The top print shows how a full screen print of graphics characters would appear, while the bottom print is of a mixture of graphics and text intermixed.

I've enjoyed reading **FOGHORN**, and have found the information included to be well worth the cost of the subscription [membership].

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1   PRINT CHR$(26):FOR Y=1 TO 18:FOR X=1 TO 50 STEP 3:POKE 61440!+128*Y+X,14:NEXT
    X:NEXT Y
2   M$=''PLACE YOUR TITLE HERE
3   FOR M1=1 TO LEN(M$):MA=ASC(MID$(M$,M1,1)):POKE 61440!+128*20+5+M1,MA:NEXT
    M1
10   WIDTH 50:DIM C$(24)
20   FOR I=0 TO 24:C$(I)='' '':NEXT
30   FOR I=0 TO 24:FOR X=0 TO 50:J$=CHR$(PEEK(61440!+128*I+X)):IF ASC(J$)>90 OR
     AS C(J$)<32 THEN J$=STRING$(1,42)
35   C$(I)=C$(I)+J$:NEXT X:NEXT I
40   FOR I=0 TO 24:LPRINT C$(I)
50   NEXT
60   GOTO 60
```

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      PLACE YOUR TITLE HERE
```

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LIST   *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
1 PRINT CHR$(26):FOR Y=1 TO 18:FOR X=1 TO 50 STEP
3:POKE 61440!+128*Y+X,14:NEXT X:NEXT Y  *  *  *  *
2 M$="PLACE YOUR TITLE HERE *  *  *  *  *  *  *  *
3 FOR M1=1 TO LEN(M$):MA=ASC(MID$(M$,M1,1)):POKE 6
1440!+128*20+5+M1,MA:NEXT M1*  *  *  *  *  *  *  *
10 WIDTH 50:DIM C$(24)*  *  *  *  *  *  *  *  *  *
20 FOR I=0 TO 24:C$(I)="":NEXT *  *  *  *  *  *  *
30 FOR I=0 TO 24:FOR X=0 TO 50:J$=CHR$(PEEK(61440!
+128*I+X)):IF ASC(J$))90 OR ASC(J$)(32 THEN J$=STRI
NG$(1,42) *  *  *  *  *  *  *  *  *  *  *  *  *  *
35 C$(I)=C$(I)+J$:NEXT X:NEXT I*  *  *  *  *  *  *
40 FOR I=0 TO 24:LPRINT C$(I)  *  *  *  *  *  *  *
50 NEXT*  *  *  *  *  *  *  *  *  *  *  *  *  *  *
60 GOTO 60*  *  *  *  *  *  *  *  *  *  *  *  *  *
D*
RUN 10PLACE YOUR TITLE HERE
*
```

Bernard E. Jensen
Bothell, WA

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AMCALL and Bell Canada

Another letter, but this time seeking information as well as informing the FOG of a problem I have discovered with Comm-Pac.

It appears that the Amcall software, supplied as part of the Comm-Pac, is not reliable when used in Canada. I am informed by my dealer that there [are] some differences in the telephone system here, when compared with the U.S.

The nature of the problems I have experienced here are as follows:

When using the Auto-dial feature it is possible for the telephone call to connect and receive the required carrier tone yet the Amcall software waits and signs off declaring the "Line Appears To Be Busy (No Carrier Detect)." At this moment I am unsure as to how many long distance phone calls, aborted in this manner, are going to appear on my next phone bill.

There are occasions when, having made a successful connection, communications cease and absolutely no key can elicit a response from the remote system. This problem is, like the previous one, intermittent and random.

The ultimate manifestation of these problems arises when one decides to subscribe to The Source. The local number for access to this, and other main frame systems, is via the Datapac system which is owned and operated by Bell Canada. Auto-dial will not make a connection even though carrier is being received. Manual dialing and connection proves this and is in fact the only way to begin a connection. Not that an initial connection is of any value whatever since no keyboard input gains any reply from Datapac. In discussion with The Source technical support after experiencing these problems, it became apparent that the Datapac System requires a UART mode of 7 data bits, 2 stop bits and even parity. Amcall does not support 2 stop bits! Discussion with my dealer reveals that Osborne Computer Corporation is aware of the problem and is supposedly working on a software patch.

Question: have you heard from any one else with similar problems and have you any Knowledge of a suitable fix? Further, have you any idea if Osborne is actually working on the problem and when do they anticipate having an answer. Very soon I hope as my patience with Osborne is running short since I still have no idea when my machine will be upgraded to double density and 80+ display despite making a reservation with my dealer in November last year. Double density machines appeared in the stores here in Ottawa last week [week of Jan. 31st] for the first time.

Sorry for the long letter. Any help you can provide will be most welcome.

Anthony L. Huxley
Ottawa, Ont
CANADA

[I have heard other reports of this type, especially in the eastern half of your country. I asked Jack Brown of Vancouver about it, and he reported similar problems, but only occasionally...David]

• • • • • • •

TIPS FOR TYROS

Tips for Tyros

by Jim Woolley

This is the second in a series of articles begun last month with definitions for "tips" (slender points) and "tyros" (novices). The points appearing here were jotted down each time I discovered a little trick about my Osborne 1. Perhaps you have uncovered some hints that would be useful to others, but you don't want to bother with a **FOGHORN** article. If you will send your ideas to me at P. O. Box 11683-A, Palo Alto, CA 94306, together we can accumulate enough material for a regular monthly column. I will give personal credit to the author of each tip, naturally.

Last month's Tip #1 noted that a colon is not required following the A or B when logging a new disk in WordStar (L command at "no-file" menu). After writing that article, I received the January **FOGHORN** (in March) and noted that Paul Pease made the same point in his WS Tips & Tricks column. Sorry for the duplication, but that will happen as several of us try to share our experience in order to help beginners.

I'm sure that many of you are already familiar with this month's tips. But read on; perhaps even you will find something interesting.

Tip #1: You may have a non-WordStar ASCII file you would like to convert to a WordStar Document mode file, so that you may edit the file and use the reform <CTRL-B> command. It will be necessary to remove the "hard" carriage return <CR> and line feed (LF) characters at the end of each line. This may be quickly done using Find and Replace <CTRL-QA> in edit mode. Respond to FIND? with <CTRL-N><RETURN>. In WordStar, <CTRL-N> represents the CR-LF pair terminating each line. Respond to REPLACE WITH by entering a space, then <RETURN>. Respond to OPTIONS? with N<RETURN>, which demands replacement without asking. Press <CTRL-L> to continue eliminating each CR-LF until the end of a paragraph is reached. Then move the cursor to the beginning of the next paragraph and use <CTRL-L> again. Go back and use <CTRL-B> to reform and clean up each paragraph.

<CTRL-N> in the FIND? string will locate both "hard" and "soft" CR-LF pairs. Since "soft" CR characters are usually preceded by a space, you may discriminate "hard" CR's by responding to FIND? with

<CTRL-O> <CTRL-N><RETURN>

Notice that there is a space character between <CTRL-O> and <CTRL-N>. This command specifies matching any CR-LF pair preceded by a character OTHER than space.

▶▶▶

Tip #2: If you have used SETUP to configure the arrow keys for use with WordStar, then the left arrow key will generate <CTRL-S>. This is frustrating when you are at the CP/M command level or are running a program other than WordStar, because the left arrow key will not backspace the cursor. However, <CTRL-H> will still produce a backspace and may be used instead of the left arrow.

Tip #3: If you try to write (e.g., REName or ERAse) on a disk which has tape over the write-protect notch on the edge of the disk, the following message will appear:

```
Bdos Error On A: Bad Sector
```

It is unfortunate that the message is not R/O (for read-only), because Bad Sector tends to make my heart pound. However, in this case there is probably nothing wrong with the data on the disk.

Tip #4: When programming in MBASIC, each program line begins with a line number, ends with <RETURN>, and may contain up to 255 characters. A program will often be made easier to read by placing entire logical modules in a single program line. Separate statements within the module may be placed on their own physical line by terminating each with a line feed character <CTRL-J> (or down arrow in CP/M arrow key configuration). The line feed starts a new physical line but not a new program line. Since 255 characters are allowed in a program line, they may be spread over several physical lines. For example, consider the following:

Before:

```
10 PIOVER4=3.14159/4
20 IF L<>0 GOTO 80
30 K=0
40 FOR I=0 TO 8
50 X(I)=COS(I*PIOVER4)
60 NEXT I
70 GOTO 120
80 K=1
90 FOR I=0 TO 8
100 X(I)=SIN(I*PIOVER4)
110 NEXT I
120 REM
```

After:

```
10 PIOVER4=3.14159/4
20 IF L=0 THEN K=0
      :FOR I=0 TO 8
      :X(I)=COS(I*PIOVER4)
            :NEXT I
         ELSE K=1
      :FOR I=0 TO 8
      :X(I)=SIN(I*PIOVER4)
      :NEXT I
30 REM
```

Each physical line in program line 20 is terminated by the down arrow key <CTRL-J>. Also, notice use of the ELSE clause to improve program structure.

Tip #5: Responding to Michael Kaufman's letter in the January **FOGHORN**, an MBASIC program run from drive A may store data on a file in drive B by including the drive name with the file name in the OPEN statement. For example,

```
OPEN ''R'', #1, ''B:PAYROLL.DAT'', 64
```

will reference a random file on drive B named PAYROLL.DAT having 64 bytes per record.

I hope you have found something useful in this month's tips. If you would like to share some of your knowledge in this column, send me a note.

* * * * * * *

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ARTICLES

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Three Days in San Francisco

by David M. Oates

March 18, 19 & 20 were busy days for me. Of course those were the days of the 8th West Coast Computer Faire, but March 19th was also the date of the "First Annual Meeting of FOG Corporation."

Since I had volunteered to work the FOG table on Friday and Sunday and the annual FOG meeting was Saturday, I attended all three days of the Faire. I haven't recovered yet!

Those of us that were able to attend the FOG meeting were treated to, not one, but two guest speakers. Both Adam Osborne and Robert Jaunich spoke to the membership and answered questions. I always like to hear Adam speak and I am delighted to have met the Osborne Computer Corporation's new President.

For any of you that came to San Francisco and then could not find the Annual Meeting, I'm truly sorry. Apparently we need to be more redundant when it comes to announcements. Enclosed with your ballot, and in addition to the statements made by the nominees, was the meeting announcement. I used the one that came with MY ballot! There on the first page I found the Purpose, Location, Date, Time, Seating and AGENDA. The meeting went exactly as scheduled. (Now I know why the annual meeting information I receive always has the When and Where info repeated on every form in the envelope.) FOG will do better next year, I'll see to it!

During those three days it was my pleasure to meet a number of "Foggies" who, until now, I knew only as voices on the phone or names in the **FOGHORN**. I also met many who saw my name badge and stopped to pass on their encourgement — most gratifying! Also, I am very pleased with (and amazed by) my success "at the polls." (See the FOG Board of Trustees election results in Frank Morton's "**FROM THE FOG**", earlier in this issue.) I thank you for your support.

As for the Faire, it was bigger and more crowded than ever before. At the Sunday morning exhibitor's breakfast, Jim Warren, the man that creates the whole thing, announced the Friday and Saturday head count at around 45000, which doesn't include the bootlegged tickets being sold at the BART (train) station. Last year's THREE day total was something like 37000. Warren said that next year there will be another convention hall added to the Faire and a shuttle bus will be provided to move attendees between halls.

A new attraction this year, and one of the most pleasant places to visit, was the Osborne Support Room. I found a nice bright place with friendly people ready to answer everyones Osborne questions. (I heard that they even had refreshments available, but I didn't notice any during my three visits.)

There was a counter top covered with Application Note (AN) sheets designed to aid Osborne/printer interfacing. I picked up one of each. I'll list them here so that you will know that they exist. There may be more by now; ask your dealer.

CENTRONICS 739/737	AN-08
CENTRONICS CABLING THEORY	AN-02
C. ITOH STARWRITER 25/45	AN-03
C. ITOH 8510A (and NEC 8023A-C) PARALLEL	AN-01
DIABLO 630 SERIAL	AN-09
DIABLO 1610/1620 SERIAL	AN-07
EPSON MX-80 CENTRONICS CONFIGURED	AN-05
IDS-440 and 460 SERIAL	AN-04
NEC 7730 PARALLEL	AN-11
NEC 8023A-C (and C. ITOH 8510A) PARALLEL	AN-01
OKIDATA MICROLINE 82-A CENTRONICS CONFIGURED	AN-06

(Oops, I wonder what happened to AN-10. Maybe I missed one.)

In the back of the room was a table set up specifically to handle inquir about the 80+ column (and double density (?)) upgrade. Very handy indeed!

Since, I have never had any problems with my 20 month old machine; it hasn been upgraded yet, and they didn't have any printer interface info on my DT 382, I spent my time there looking-out for you.

I don't know if the idea for a customer support room is original or unique, but i was an excellent idea and I commend OCC for having the sagacity (maybe guts) necessary to set one up.

For me, this Faire offered no big announcements or surprises, and I wasn't particularly shopping for anything. (I couldn't find a Quadram Microfazer or a Novation J-Cat.) And, I was so tired Sunday that I couldn't talk my budget into a $689 Epson MX-100. In fact, I didn't buy any thing during the whole show except a stale hot dog. So, I spent my time wandering around looking for items of interest.

Here are the products that caught my attention.

1. **Drive C:**

Drive C: is a device which adds storage (memory) to your Osborne 1. This is up to 384K bytes of "ultra-fast" RAM (20 times faster than floppy access) — no moving parts. It fits into the diskette pocket and is connected to the IEEE 488 port. A Centronics style port is provided for your printer. Drive C: comes with a diskette containing a CP/M enhancement — "RAM-Disk emulation." You can get 192K RAM for $395 or 384K RAM for $695.

I got most of this info from a handout. Unfortunately, the unit I saw was not functioning.

You can get the whole story from: Drive C:, (415) 549-1906 or Computer Center, Inc., (415) 845-6366. They are both located in Berkeley, CA.

2. **Sweet-P**

Sweet-P is a real SWEET little Plotter, put out by Enter Computer, Inc. of San Diego, CA, (619) 450-0601. It was being shown, and is distributed, by Compac Microelectronics, Inc., of Santa Clara, CA, (408) 773-0444.

Sweet-P is a flat sheet plotter that will do all of the things you would expect a low end plotter to do, and it was doing them very well — right before my eyes. It will plot on paper or overhead transparency film and the media can be up to 120 inches long (by 8 1/2 inches). It draws at 6 inches per minute, can draw characters in any size from 1/8 inch to 20 inches and uses precision pens by Enter Computer or one of the many commercial pens available in stationary stores. The step size is 0.004 in. (250 increments/in.). It measures 2.9(H) x 8.8(D) x 14.3(W) in., and weighs 6.5 lbs. The computer interface is through the parallel port of a long list of computers, including Osborne 1.

The package, which includes interfacing and software, was $795.

3. **ZORBA — a portable microcomputer.**

I talked with Dale Maxwell of Lafayette Computers, Lafayette CA, (415) 284-1363. Dale was demonstrating the ZORBA which is a product of Telcon Industries, Ft. Lauderdale, FL.

Now here's an impressive machine. 22 lbs., 64K, Z80A, 3 I/O ports, two 400K, 5 1/4" drives, 7" green CRT (25L x 80 col.), 95 key QWERTY, 13 key numeric pad, nice software package including CBASIC and MicroPro products. And, for you Special Function Key fanciers, 55 software programmable function keys (three of them with prompt lights)!

Reportedly, it can READ, WRITE and FORMAT the diskettes for Xerox 820 (SD & DD), DEC 180 SD, Osborne 1 SD, Cromemco 520 SD, KayComp II DD, and CP/M-86 SD for IBM-PC.

A multi-featured package for about $2100, the unit, in my opinion, has a few rough edges to straighten out (i.e. the power cord is attached to the front and is stored sandwiched between the front panel and the keyboard). All in all, I see the ZORBA as a very competative entry in the current portable market.

4. **Chameleon — a portable microcomputer.**

One had to venture into the darkened exhibit of Perfect Software to find this one. Up the ramp lined with blinking footlights and down into the dark display room, with smoke and "lazer" lights, that's where you had to go to find the Chameleon (at work demonstrating Perfect Software).

Briefly, the Chameleon, by Seequa Computer Corp., Annapolis, MD, (301)268-6650 (I was told that they have an 800 phone number, but I was not able to get it) has an 8088 and a Z80A CPU. It is IBM-PC compatible (or as compatible as one can get without the IBM secrets), had dual 320K, 5 1/4" drives, 128K RAM, 9" green CRT (80 x 25), graphics, 1 serial port, 1 parallel port, and runs with MS-DOS.

Some of the options listed are CP/M 86, CP/M 80, an expansion box, 256K RAM, Bisync. communications and an IEEE 488 port.

5. **JONOS — a portable microcomputer.**

The Jonos Model C2100 is manufactured by the Jonos Corporation, 920-C East Orangethrope, Anaheim, CA 92801, (714) 871-1082.

I attended a Press Announcement where John Amos, President of Jonos, presented the model C2100. The most significant feature of this unit is the use of the STD buss system; the eight slot card-cage has 5 slots available for adding features.

Another notable hardware item is the use of two SONY 3 1/2" micro "floppy" drives for a total of 644K of storage. (Other drive configurations are available.)

A few more features are, a Z80A, 64K RAM, 9" green CRT (25 x 80), 92 keys, and two RS232C ports.

The software pack contains CP/M (Digital Research), Basic-80 and Multiplan from Microsoft, and Spellbinder and Spellcheck from Lexisoft.

This computer is designed to be expandable, and to attract the expansion minded Osborne 1 owners the company is offering a $1500 trade-in for the Osborne 1 as credit toward the purchase of the C2100. I wonder what will become of the Osborne software.

At $3995, the Jonos Model C2100 is really in competition with the likes of Otrona's Attache, but the marketing pitch was aimed squarely at Osborne. (If you are the competition's target, you know you're on top!)

Now remember I said these items were interesting, I didn't say I was promoting them.

I heard about another business, micro manufacturer that is going to introduce a portable. "So why not," you say, "everyone else is." Ya, but this one is said to weigh 30 pounds! Hell, I think 25 pounds is too much.

All this may make you wonder what the next Osborne will be like (as if you haven't wondered that before). Well, I don't know. But, I heard of an eye witness (not an OCC employee) that might have seen, from a distance, several Osborne ?'s being assembled. These unidentified machines were reportedly housed in cases about 2/3 the size of our Ozzies and were sporting a larger-than-5" CRT. That's not a very exciting rumor is it. Well, so much for rumors.

Those of us that attended the March 3rd, 1st FOG of Silicon Valley (formerly the Santa Clara FOG) meeting were told that "yes OCC would announce a new system, SOON — no it won't be at the 8th West Coast Computer Faire." Well, the last part was true and we'll just have to wait for the rest.

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The C Programming Language

by Bob Briggs

Once you get tired of BASIC and start exploring other high-level languages available for your Osborne 1, you will probably find yourself an exponent of Pascal, Forth, C, RATFOR, Modula-2, or Ada. (Are the latter two available on the Osborne?). Other possibilities are the older Fortran, APL, PL/I, or Cobol but these are not currently in vogue. I find myself in the middle of trying to learn the C programming language, and would enjoy reading more about it in the **FOGHORN**.

INTRODUCTION

C is defined in the book **The C Programming Language** by Brian W. Kernighan and Dennis M. Ritchie, Prentice-Hall, 1978. In the preface to this book, C is described as "a general-purpose programming language which features economy of expression, modern control flow and data structures, and a rich set of operators." C provides enough low level control to be a suitable alternative for assembly language, and is sufficiently powerful for writing large programs such as word processors and electronic spreadsheets. At a recent meeting at the Santa Clara FOG, a MicroPro representative said that the nex version of Wordstar is being written in C.

Compared to Pascal, for example, which was designed by a college professor to teach programming, C was designed by programmers to make programming enjoyable. C is fun to program in because it is flexible and because it has some convenient shorthand notations. As an example, compare the FOR statements of C and BASIC. Assume we are printing (to the screen) characters typed in at the keyboard. After we have typed 10 characters or the letter "Z", the program exits. In BASIC we have:

```
 10 FOR I = 1 TO 10
20 A$ = INKEY$: IF LEN(A$) = 0 THEN 20
30 IF A$ = ''Z'' THEN 60
40 PRINT A$;
50 NEXT I
60 END
```

By convention, lower case is used for C programs. In C we could write:

```
main()
{
    int a;
    int i;

    for(i = 1; i <= 10; i = i + 1)
  {
            a = getchar();
            if(a == 'Z') break;
                    putchar(a);
         }
}
```

although the more experienced C programmer might write:

```
main()
{
        int a,i;
        for(i = 1;i <= 10 && (a = getchar()) !=
  'Z';putchar(a),i++);
}
```

This latter version illustrates both the flexibility and notational shorthand of C.

C is written in terms of functions. Every C program begins with the function "main()". A function is a name followed by parentheses, which may enclose variables passed to the function by the calling routine. A function is called by simply naming it.

Following the function name and parentheses are variable declarations. In the above example, "a" and "i" are declared to be integer variables. Next is the body of the function, which is delimited by braces {curly brackets}. The brace at the end of the function main() terminates the program. The body of the function contains one or more statements, each terminated by a semicolon.

The "for" statment is of the form:

```
for(expression1; expression2; expression3) statement;
```

Expression1 is evaluated first, then expression2. If expression2 is not zero (not false), then the statement is evaluated, followed by expression3. Then expression2 is evaluated and tested again, etc. Multiple expressions can be combined by separating them with a comma. Thus the "for" statement in C is quite general (and flexible) and not limited to stepping a variable by a fixed amount as in BASIC.

Other strange notations used above are as follows:

1. Double equal signs (==) are used for equality testing. This bags me every time I write an "if" statement — if(a = b) when I meant if(a == b).
2. The "break" statement breaks out of a loop.
3. Logical "AND" is written "&&".
4. Incrementing can be shortened to "i += 1" or "i++".

C's shorthand can be addictive. Once you get used to it, you miss it when you go to a language that does not have it.

As you can see, C provides flexibility and allows concise code, even to the point of obscurity if you want to. But you can also write very clear code in C.

If you are new to C, I hope this brief introduction has aroused your interest. The remainder of this article describes some of the history of C and gives references for further reading.

→ →

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HISTORY

C is the primary language of the UNIX system, a time sharing (multi-user) system. UNIX was written at Bell Telephone Laboratories (in New Jersey) by Ken Thompson and Dennis Ritchie. The earliest versions of UNIX were written in assembly language (circa 1969-70) and ran on the DEC PDP-7 and -9 minicomputers. A second version ran on a PDP-11/20. In 1973 UNIX was rewritten in C and ran on the PDP-11/34, /40, /45, /60, and /70 computers. Later it was implemented on an Interdata 8/32 at Bell Labs.

UNIX was designed to provide a desirable environment for programmers — i.e., to make it easy to write, run, and debug programs. The same applies to the C programming language, which was written in 1972 by Dennis Ritchie for the PDP-11 under UNIX. C was influenced by the language B, written by Thompson in 1970 for the first UNIX system on the PDP-11 (or PDP-7, depending on which article by Ritchie you read).

C was developed for the PDP-11 but was soon also running on the Honeywell 6000, the IBM 370, and several other large machines. In the May 1980 **Dr. Dobb's Journal**, Ron Cain's Small c compiler for the 8080 was published and the C language began gaining popularity in the microcomputing hobby world. This issue of **Dr. Dobb's Journal** is out of print but might be at your library. The last time I looked it was at Palo Alto but stolen from Mountain View. The September 1980 issue is also interesting because it contains Ron Cain's runtime library, which lets you do input/output. Both articles are available as reprints in **Dr. Dobb's Journal** Vol. V for $22. They are worth reading because they tell how the routines work and give ideas for modification. An improved version of the Small c compiler by J. Hendrix was published in the December 1982 and January 1983 issues of **Dr. Dobb's Journal**.

The Small c compiler is in the FOG library. Directions on how to get it up and running are in the article by George Weir in the October 1982 **FOGHORN**. It is also available commercially in enhanced form from The Software Toolworks ($49) or The Code Works ($95), for example. C compilers come in two flavors: with and without floating point. The cost goes up considerably if you want floating point.

LITERATURE ON C

Two or three years ago you could only find one or two books on Pascal. Today there must be dozens. In terms of available literature, C is where Pascal was a couple years ago. I expect it will grow. Here is a partial list of the literature I'm aware of.

The **Bell System Technical Journal (BSTJ)**, July-August 1978. This is a fat issue devoted to UNIX and C. It contains the history of C and a summary of the language, including its strengths and weaknesses.

The C Programming Language by Brian W. Kernighan and Dennis M. Ritchie, Prentice-Hall, 1978. As mentioned above, this book defines the C language. It is written to teach the experienced programmer what C is and how to use it. If you can program in any language, and have the C language running on your Osborne 1, you'll be able to learn C from this book. It could be improved by including an ASCII table in an appendix.

The C Puzzle Book by Alan R. Feuer, Prentice-Hall, 1982. A large set of short quizzes written by a teacher of the C language. Complements the Kernighan-Ritchie book. Plenty of blank space on most of the pages to write down your answers. If you think you know C, you'll know it a lot better after working through some of these exercises!

Learning to Program in C by Thomas Plum. An introductory book on C from Plum Hall. I've only seen the advertisement (in January 1983 Dr. Dobb's.) The $25 price scared me off.

Dr. Dobb's Journal; particularly May and September 1980, and December 1982. Public domain small C compiler by Ron Cain and some description of how it works.

C Language's Grip on Hardware Makes Sense for Small Computers, by Krieger and Plauger, **Electronics Magazine**, McGraw Hill, May 8, 1980, page 129. The proprietors of Whitesmiths, Ltd., purveyers of a powerful C implementation, push their product. C is portable, efficient, and fills a gap between assembly and high-level languages. Examples of pointer arithmetic demonstrate C's peculiar succinctness.

Electronics Magazine, McGraw Hill, October 20, 1982, page 109. A short article with background material on UNIX, C, and their inventors.

Eratosthenes Revisited, by Jim and Gary Gilbreath, BYTE Magazine, January 1983. Benchmark performance using the sieve of Eratosthenes. A replay of an earlier article, this time concentrating on Pascal and C compilers. The authors like C for its lack of restrictions and superior portability compared to Pascal. They compare programming in C to driving a sports car, and urge caution if you decide to take a corner on two wheels.

A Comparison of the Programming Languages C and PASCAL, by Alan R. Feuer and Narain H. Gehani, ACM Computing Surveys, Vol. 14, No. 1, March 1982, page 73. An interesting 20 page article summarizing and comparing the two languages by the author of **The C Puzzle Book** and another Bell Labs employee. Pascal is safe, C is flexible. Neither is good for business programming (accounting, data base), both are only adequate for scientific programming. Pascal is preferred over C for both scientific and business programming because of its safety (it's harder to make an undetected mistake in Pascal). C is better for programming of operating systems.

Type Syntax in the Language C, by Bruce Anderson, SIGPLAN not. (ACM) 15,3 (Mar. 1980), pp. 21-27. An Englishman wonders how a language as confusing, vaguely-specified, and lax as C can be so successful and widespread.

The C Users' Group, Box 287, 112 N. Main, Yates Center, KS 66783. Annual membership fee $10. Originally devoted to the BDS C compiler, has a newsletter and a disk library full of material written in C.

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Structured Flowcharts

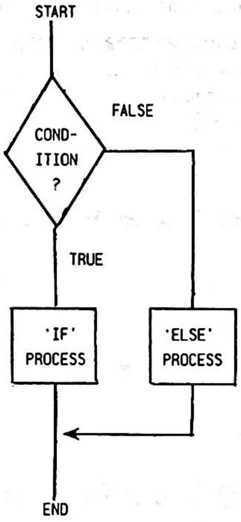
by Bob Briggs

You're a new programmer and you've just been asked to write a small program during a job interview. What's the first thing you show your potential employer when you're ready with your program? A flowchart, right? This is what some instructors will tell you, anyway.

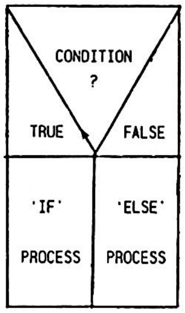
Without getting into whether or not you should use flowcharts (Why should you waste time on a flowchart — you've got it all in your head! But you need it for documentation... etc.) I'll describe one alternative to the traditional technique of diamonds and boxes and connecting lines that foster arbitrary transfers of control (i.e. GOTO's and hard to follow code.)

Nassi-Shneiderman (N-S) charts support structured programming concepts. After you have described your program with N-S charts, writing structured code follows easily, especially if you are using a structured language such as Pascal or the C programming language. These charts were first publicized by Messrs. Nassi and Shneiderman in their article ***Flowchart Techniques for Structured Programming***, SIGPLAN notices of the ACM, v. 8, n. 8, Aug 1973. An article by C. Yoder and M. Schrag of IBM in Proceedings, **ACM SIGSOFT/SIGMETRICS Software and Assurance Workshop**, Nov 1978 further describes and supports the use of these charts.

The IF-THEN-ELSE construct is represented as follows using conventional flow charts:



The IF-THEN-ELSE construct is represented as follows using N-S charts:



In both of the above charts, if the CONDITION is TRUE, the "THEN" process is performed. If the condition is FALSE, the "ELSE" process is performed.

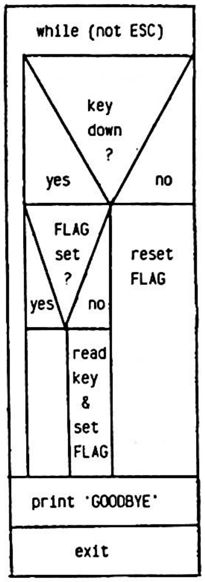
Similar N-S chart representations exist for other constructs such as WHILE, and DO UNTIL.

Here is an example of using the N-S charts. The problem is to read a keyboard to see if a key has been pressed, and to report only one keypress each time the typist presses a key. We will assume that the computer must continually query the keyboard to check for a key, and further assume that the computer does not have to handle the debounce problem — i.e., the key only appears to go up and down once for each keystroke by the typist. Since the typist holds the key down for several queries by the computer (the computer is very fast), the computer has to keep track of when the key is down and when it is released.

To keep track of whether the computer has already read the key we will use a variable, called FLAG. If FLAG is SET (TRUE), the key was already read. If FLAG is RESET (FALSE), the key has been released or it has been pressed and the computer has not read it yet.

Finally, if the ESCAPE key is pressed, the program will print "GOODBYE" and exit.

Here is the N-S chart.



The "while (not ESC)" is my shorthand for "while the key pressed is not the ESCAPE key, continue with the contents of the while loop". The limit of the while loop is denoted by the extent of the vertical bar to the left of the while statement. In this example, it extends down to, but not including the print statement. By definition of the "while" statement, if "not ESC" is not true, (i.e. if the ESCAPE key is pressed), then program execution continues starting past the end of the while loop. This is the print statement in this case.

The body of the while loop contains two nested IF-THEN-ELSE constructs. If a key is not down, then the variable FLAG is reset (i.e. set to zero, or false, or not set). Then we have reached the lower limit of the "while" loop and so go back to the top.

If a key is down, then FLAG is checked. If set, then the key was down the last time it was checked. Since we do not want to read it again, we do not do anything and go back to the top of the loop and check the "not ESC" condition again.

On the other hand, if a key is down and the flag is not set, then we do read the key and set the flag before going back to the top of the while loop.

I haven't drawn out the conventional flowchart for this example, but I believe it would be harder to follow, and more difficult to write structured code from. You're invited to try it and compare.

The articles mentioned above have more extensive examples of Nassi-Shneiderman charts. If their simplicity, readability, and codeability interest you, check them out!

* * * * * * *

RENEW!

REVIEWS

A Review of the ADA Compiler

By William E. McCoy III

I rate the ADA compiler by SuperSoft and its associated documentation as GOOD. This comes from averaging the rating on the software which comes on the disc as VERY GOOD, and the documentation which comes with the disc as FAIR.

I liked the demonstration programs on the diskette which was supplied to me. I found them easy to read, once I listed them out, and they had samples of all the language constructs which occur in SuperSoft's subset of ADA. My only recommendation for SuperSoft of the potential User is that they convert the tabs to one or two spaces, using an editor, if they are going to look at the listings on the Osborne I screen. I liked the utilization of disc space which SuperSoft's compiler uses. Specifically, it seems to use only as much disc space for the temporary files as it will take up when the final compiled version is in place. Moreover, it only uses as much space as the source code file, plus 5K, not 4K for the kernal. If SuperSoft adds to their subset the Records facility with pointers such that their subset is comparable to Pascal, then I would be willing to increase my rating of the software to EXCELLENT.

SuperSoft, like most suppliers of software for the Osborne I, or for systems other than the one for which the software was originally developed, simply copy the software over onto a compatible disc for the new system, without checking to see how that software will actually run on the new system. Case in point: SuperSoft's demo program MAZEWAR. When that program is compiled and run on the Osborne I, the MAZE ends up on one location on the screen, and the figures, or whatever they are which are to run around in the MAZE, are about a half a dozen lines out of sync with the MAZE itself, which I found very disconcerting.

I wish to make a parenthetical Note: The largest demonstration program, called STARTREK, consisted for 453 lines of ADA code; and the file which contained the code was around 10K. This ADA program took around 2-1/2 minutes to compile. There is no question when the ADA compiler is in operation, because the disc drive is chattering away like crazy from the usage of temporary files by the compiler. The PRIMES program, which is supplied as a benchmark, is 32 lines of ADA code; the source code took approximately 2/3K, the compilation took 26 53/100 seconds, and generated approximately 6K of object code. The running of the PRIMES program listed out that it ran 10 iterations, and computed 1899 primes. This was accomplished in 6 minutes, 46 39/100 seconds, for 40.639 seconds per iteration.

As I indicated at the beginning, I found SuperSoft's documentation, which comes with the package, only FAIR.

First, they do supply DOD's Reference Manual. Even though this Reference Manual has some good examples, it is not for the novice. I would heartily recommend that anyone who is going to attempt ADA, who is not familiar with a number of other languages, and how to use them, should not only read the books suggested in the Bibliography supplied by SuperSoft, but should also get their hands on the Rationale for ADA, which is also available from the Government Printing Office. I believe that Rationale is almost indispensable even for the experienced Computer Scientist who plans to code in ADA.

SuperSoft's 30 page User's Manual is a Reference Manual in its own right, and was easy to read and follow. It had good definitions for all of the constructs of the subset; an explanation of what was not implemented; and it had the BNF syntax equations for the subset of the language which they have implemented. I like this. Again, the User's Manual is fine for the seasoned Computer Technologist, but it is not a Tutorial on ADA.

I found in actually setting up to run the Compiler, and checking out the Demonstration Programs, several of what I consider glaring omission in the documentation. First, the 4 Object Modules of the compiler and the source code of the program to be compiled need to be put on the same writable disc. This presumes that the User has already backed up the originally supplied Systems Disc, and write-protected not only the original disc, but also the backup. Personally, I also write-protect my working copy, and transfer the file I am going to use to a writable disc from that write-protected working disc. I also found that if a rerun of a compilation is to be run on the same writable disc, that the previous compiled version has to be erased, along with a couple of temporary working files, otherwise you have some rather interesting results! Finally, I felt that it would be useful to have a little more documentation than one-liners on each of the Demonstration programs. At a minimum, I would like to see a paragraph of the basic commands and how to use STARTREK and MAZEWAR. It took a bit of doing, specifically reading the source code, to figure out what TOUPPER was, and how to use it. The 3 Demonstration Programs, MAZEWAR, DUMP1, and TOUPPER were not listed in the documentation as being present on the distribution disc. They just came as a nice surprise, and needed a bit of exploration.

In conclusion, I like what I received in the package, and found it fun to use. I had an enjoyable time checking out this package, and would recommend it to the serious Computer Science Devotee. My professional rating of the overall package, including the software and documentation supplied is a resounding GOOD.

[I thank William E. McCoy III and the ***SOFTWARE PROGRAMMERS NEWS****, July 1982, for this article. Also, since Mr. McCoy does not mention any particular version number, readers should take note of the date for comparison to any version being considered and look at the possible improvements....Ed]*

• • • • • • •

HELP

(or That's Not a BUG it's a Feature)

By Bradley S. Albom

Welcome again to the **FOGHORN** Help column. This is the place to send any software problems you are having with your Osborne Personal Computer. Send a letter of a page or less to:

Bradley S. Albom
c/o COMSOL
P.O. Box 206
Pt. Richmond, Calif 94807

If you prefer the phone, you can also leave me a message at (415)-234-8346. It's probably best to use the phone if you have a quick solution to any of the problems brought up in this column. You're also welcome to try and explain your problem to the machine. I can't guarantee a solution, but at least it will get a public airing. Remember, the lead time for this column is two months. If you can wait that long for an answer, fine. If you can't, include a SASE or post card with your mailed in questions.

I'd like to start this month with an offer for those of you trying to master Adventure or Zork (Zork is also known as Dungeon on some systems). It's been a couple of years since I made it through both games but I'd be glad to dig out my maps to lend you a hand. While I could probably give complete solutions, I think the games would be more interesting if you limited requests to one or two hints per letter. Remember to include a self addressed post card.

The rest of the column will deal solely with questions. Michael Rossman of Berkeley likes being able to program the special function keys. In fact he likes it so much he wants to know if there's an easy way to increase the number of characters available (to say 200). Unfortunately, I haven't found a simple solution.

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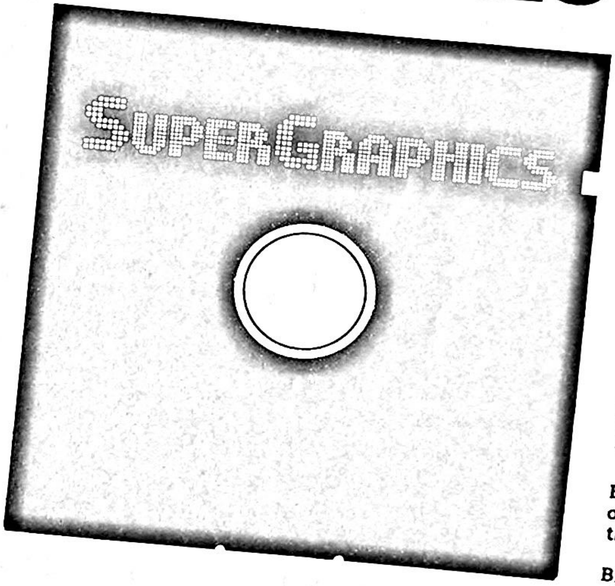

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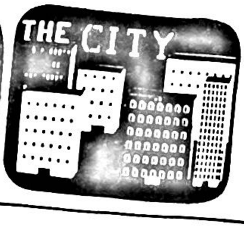

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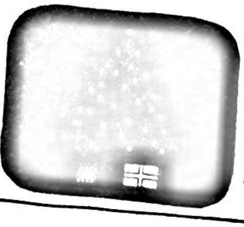

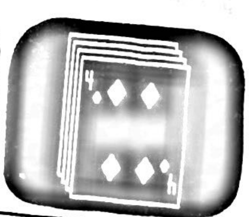

My Osborne manual did help me track down what's going on and why we are limited. In my Chapter 9, p. 268-9, the manual refers to a lookup table at address E56B and a buffer at address E592. Both these addresses are located in the BIOS address space which goes from E500 to F000. The lookup table is a list of 10 addresses, one corresponding to each programmable key (Actually, there are a few more addresses for keys which I haven't figured out yet). The addresses in the lookup table are all in a buffer space starting at E592. The problem is that this buffer area is only 96 characters long. I don't know if there is enough space left over elsewhere in the BIOS to increase the buffer size but it would undoubtedly require some significant changes. There appears to be useful information on either side of the buffer space. Can anyone out there think of a simple solution?

Next, Mr. C. Longman of Washington D.C. wants to be able to toggle the MBASIC PRINT statement to direct output to either the screen or the printer. This is similar to CBASIC's CONSOLE and LPRINTER statements which do exactly that. This would be a useful feature for MBASIC since you would otherwise have to use duplicate PRINT and LPRINT statements depending on where you want to direct your output. As it turns out, there is a way to do this with MBASIC's POKE statement. Once again Chapter 9 has a section called "The Modem and RS232 Interfaces." It describes memory location 0003, the IOBYTE switch, which tells CP/M where to send output. When MBASIC comes up, this location will normally contain a 64(10) or a 128(10) which tells CP/M to direct list output from the LPRINT statement to the parallel or serial port. There is also a way to direct the CONSOLE input and output to these ports. If you put a 1 in location 0003, console output goes to the serial port and a 2 in this location will send it to the parallel port. The toggle you're looking for is a POKE 3, 1 or POKE 3, 2, depending on where you're printer is connected. Do not however, try this in immediate command mode from MBASIC since it will redirect all console I/O to the printer. Since most printers can't produce input, you'll be stuck in this mode until you reboot. I'd try a general approach like this:

```
  100 IOBYTEX = PEEK(3) :'SAVE ORIGINAL CONTENTS OF IOBYTE
110 POKE 3, 1 :'REDIRECT CONSOLE TO SERIAL PORT

. Print statements

120 POKE 3, IOBYTEX :'RESET CONSOLE INPUT/OUTPUT
```

Mr. Longman also wants to know if PASCAL is available for the Osborne 1. I don't know if there are any public domain versions but there are certainly a whole slew of them being marketed commercially. In addition, Osborne has promised to bundle a PASCAL with the Double Density upgrade. Does anyone out there know of a public domain version for the Osborne? He also asks if FORTH is easy and efficient? Well FORTH is used extensively to code video arcade games. This says a lot about its efficiency. Unfortunately, it's not a simple language, especially if you're familiar with some other language. In addition, it encourages, even forces, you to create your own extensive library of user defined functions. While these are incredibly useful, they can and usually do make your programs incomprehensible to anyone else.

Can the ".UJ" command be made to work with the C. ITOH Prowriter? The ".UJ" command enables microjustification. This however can be misleading. In WordStar, microjustification is accomplished by inserting blank spaces between words to fill out a line. WordStar uses whole blank spaces and not fractional spaces as the "micro" prefix might lead you to believe. Given this, my Prowriter works fine in microjustification mode.

Thomas Brantigan of Omaha wants the Hex addresses for various WordStar functions. Check the Dec 82/Jan 83 issue of the **Portable Companion**. Page 86 has exactly what you're looking for.

Les Andrews of Los Altos has experienced phantom / duplicate lines appearing on his WordStar display when doing an insert line (^N). While they look incorrect, they are only on the display and not part of your file. These lines go away if you scroll them off the screen and back on again. I've also seen these phantom lines and sometimes individual phantom characters. Since they don't affect anything, I tend to ignore them. Does anyone know if there's a patch for this minor bug? If not, I would rather see MicroPro work on new useful features instead of worrying about this one.

In the November 1982 **FOGHORN**, Robert Bollini of Nova Scotia, Canada notes that the ^A option to WordStar's ^QA function doesn't do anything. This is supposed to find any single character in the file. Well mine doesn't work either so it's probably not a defective copy. In addition, the ^S option doesn't work and if you want to see something really weird, try the ^O option. The ^N option does seem to work. See the WordStar reference section, page R-43-45 for a further explanation of these features. Does anyone have a copy that works? A letter in a previous **FOGHORN** recommended using these options elsewhere in the find and replace sequence. I've tried all sorts of contortions and none have worked yet.

With respect to PIP's S and Q options, they do seem to work for me but you have to be careful. First, be sure not to put any spaces between the end of the filename and the bracket, [, starting the options section. For example:

```
PIP CON:=FILE.DAT[Sone^Z Qtwo^Z]
```

Remember to end each string with the <CTRL>Z. I've also found that if you specify an ending string that isn't in the file, PIP will erase the screen and display a single "[" bracket when it hits the end of the file. Interesting feature, huh?

While we're on PIP, another **FOGHORN** letter complained of not being able to close a file being transfered from computer to computer. Sending a <CTRL>Z may help in this case. Generally, if you want to enter lines of text or data into a file and you don't want to get into WordStar, try using PIP. Start with:

```
PIP FILE.DAT=CON:
```

PIP is now going to put whatever you type at the terminal in the FILE.DAT file. The RETURN key however is only a Carriage Return. On my machine, the down arrow is the Line Feed. Finally, to end input into the file and return to CP/M or PIP, hit the <CTRL>Z.

Well, that's all I have time for this month. Next month look forward to my comments on some interesting features of the double density and compressed screen options. I haven't yet decided whether they qualify as bugs. Until then, keep those cards and letters coming.

• • • • • • •

APPLICATIONS TOOLBOX

A User-Defined Key for MailMerge

by Michael Alan Bermant, M. D.

*[Last month I keyboarded this into the **FOGHORN** and gave it the title **AN ADDRESS BOOK FROM YOUR MAILMERGE**. At that time, I didn't know that I would be receiving it by modem, and that there was more to it. So, here is the entire article .... David]*

A MailMerge file of addresses has each entry followed by a carriage return. Such a file can serve as an address book. Each group of addresses is identified by the file name ——————.ADR (i.e. MAIN.ADR, JOURNALS.ADR, BILLS.ADR, CLIENT.ADR). I enter the file of choice using the N command from the WordStar "Edit No File" menu. Moving the cursor to the address desired can be done manually or with a ^QF [Quick Find] command [e.g. ^QF Smith, ^QF Portable Companion]. I then send that entry to my MailMerge print data file "A" with a single user-defined key. For this key to work, you will have to start with a file named "A", or an extra Y will appear on your master address file.

Install the following with the SETUP command:

```
^QF^N<ESC>^S^KK^QF^N<CR>B<CR> ^D^KB^KWA<CR>Y^KH
```

A ^ before a letter means that the letter must have the control key pressed down before hitting that key

<ESC> is the escape key

<CR> is the carriage return key

The method used to mark a block will accommodate addresses that have exceeded a single line. When calling this user-defined function, the cursor may be anywhere within the address entry. At the completion of the command, the cursor will be at the left edge of the screen.

Dissection of this command follows [ignore spaces added for clarification]:

^QF ^N <ESC>	: finds the first carriage return (^N) with the cursor moving forward.
^S	: moves the cursor back one space so that the carriage return character will not be included at the end of the line.
^KK	: marks the end of the block.
^QF N <CR> B <CR>	: moves backwards to find the beginning of the entry [remember, entries are separated by a <CR>].
^D	: moves the cursor forward to exclude the <CR>.
^KB	: marks the beginning of block.
^KWA <CR>	: writes this block to file named A.
Y	: answers affirmatively the computer's question "overwrite existing file?"
^KH	: hides block markings, leaving original list as it was before the command.

Make certain that there is a ^N before the first address in the file as well as one following the last one. Otherwise the function will not work on the first or last addresses. I guarantee the first ^N by having the title of the address file as the first line.

I do not use this technique for mass mailing, but for separate addresses I plan to write to often in the future.

To modify this key for mass mailing, the file "A" should first be emptied. Then use the following instead [type as one continuous line]:

```
^QF^N<ESC>^S^KK^QF^N<CR>B<CR> ^D^KB^N^KRA<CR>^KWA<CR>Y^QK^L
^D^KK^KY
```

changes:

^N ^KR A <CR>	: adds the previous content of "A" before the block beginning is marked by the ^KB. The ^N adds the needed <CR> between entries.
^QK	: finds the end of the block.
^L	: repeats backward search for ^N
^D ^KK	: includes the added ^N in the block to be erased [we again want to leave the file as we found it].
^KY	: erases block including all added information.

This user-defined key will add the address to what ever is already in the file "A". Each entry will be separated by a carriage return. Move the cursor to each new line to be added [different files may be used], press the user-defined key, and the addresses will accumulate in "A". Remember an empty file named A must exist before starting the accumulation.

[Dr. Bermant is the President of the St. Louis Osborne Group]

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SYSTEM NOTES

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SWAP vs. Shell Sort

by Doug Hurst

Some of you who are familiar with another form of MBASIC or any BASIC for than matter might not be too familiar with the SWAP function found in version 5.21 supplied with the Osborne. Some of your new programs, or old programs which you converted to run on the O-1, may be running inefficiently because you are using the old reliable (but slow) "shell sort" routines. If you are not familiar with the shell sort or SWAP, this article still has value, because if you get into MBASIC programming, you will, at some point, require the ability to perform a sort routine.

Sometimes you will want to sort from little to big, and sometimes vice versa. As your program makes comparisons between variables, there will ultimately be a need to turn two or more of them around (SWAP them) in order to effect the proper sorting order. In the old shell sort this switching would take the following form.

On separate lines one step at a time:

```
  IN:     A=3
          B=5

          TEMP=A       REM TEMP and A are now equal at 3
          A=B        REM Now set A equal to B at 5
           B=TEMP        REM Now set B equal to TEMP (old A) at 3

OUT: A=5
          B=3
```

Could be written on one line of code as:

```
TEMP=A:A=B:B=TEMP
```

NOTE: If you hadn't already guessed, it's called a shell sort because of its resemblance to the pea under the shell game. Remember Hans Conreid as the river boat gambler in Walt Disney's Davy Crockett? Oh well, that's another story.

In a program this might be tied to an IF-THEN statement (usually the case).

```
IF A>B THEN TEMP=A:A=B:B=TEMP
```

If A was equal to or less than B, obviously the statement would be ignored and A and B would keep their original values.

In MBASIC version 5.21 we don't have to mess with the shell sort. This version of MBASIC has a built-in function called SWAP. Using SWAP, the IF-THEN statement above could be written as:

```
IF A>B THEN SWAP A,B
```

Much, much SIMPLER and what's more important almost 1/3 FASTER!!

The program included below is a simple sort routine. In its present form it will read the numbers contained in the DATA statements then sort and print them in order from 1 to 100. Using it with alternate line 60 containing the shell sort switching technique takes approximately 42.55 seconds. Using the line 60 containing SWAP takes 31.23. seconds.

```
5 DEFINT I-K       REM See NOTE
10 READ N
20 DIM A(N)q130 FOR I=1 TO N:READ A(I):NEXT I
40 FOR I=1 TO N
50 FOR J=I+1 TO N
60 IF A(I)>A(J) THEN SWAP A(I),A(J)      REM            SWAP line 60: Change > to <
                                                        and sort will be from 100 to 1
                                                        (60   IF   A(I)>A(J)   THEN
                                                        K=A(I):A(I)=A(J):A(J)=K
                                                        REM shell sort line 60)
70 NEXT J
80 PRINT A(I)
90 NEXT I
100 PRINT CHR$(7)
110 END
120 DATA 100
130 DATA 1,2,3,4,5,6,7,8,9
140 DATA 10,21,32,43,54,65,76,87,98, 19
150 DATA 20,31,42,53,64,75,86,97, 18,79
160 DATA 30,41,52,63,74,85,96, 17,28,29
170 DATA 40,51,62,73,84,95, 16,27,38,59
180 DATA 50,61,72,83,94, 15,26,37,48,39
190 DATA 60,71,82,93, 14,25,36,47,58,99
200 DATA 70,81,92, 13,24,35,46,57,68,49
210 DATA 80,91, 12,23,34,45,56,67,78,89
220 DATA 90, 11,22,33,44,55,66,77,88,69
230 DATA 100
```

NOTE: It's a slightly different subject, but line 5 cuts about an additional 1/3rd off the sort time over treating I-K as real numbers. Sort times leaving I-K as real numbers were 54.38 seconds for the shell sort and 40.90 seconds for the SWAP.

I suggest you enter the program and prove this to yourself. For me, things sink-in better when I do it that way. As always, I am available if you encounter difficulty. Call (619)367-1090 evenings.

* * *

Talking to a Prism Printer with WordStar and the Osborne 1

by Brian Dugle, Fighter Pilot and sometime student...

This article should be of interest to many other neophyte hackers out there who are working at learning WordStar and getting it to talk to various dot matrix printers. Several articles have appeared in the **FOGHORN** about interfacing WordStar and the the Epson MX-80/100, but I found the information somewhat fragmented — no doubt due to my lack of experience with what was being described. In this article I will attempt to describe my experiences in enough detail so that some of you new guys/gals out there can learn from them, for what they are. Specifically, I am going to talk about SETUP, INSTALLing WordStar, the capabilities I have found in my Prism 132 from Integral Data Systems, and how I got it running with my blue case Osborne 1.

A few weeks after I got the computer my mail order printer showed up, so I decided to jump right in and hook it up. I ordered an RS-232 cable with the printer, the cable came with a tag reading "Altos to Paper Tiger". I picked the serial cable because it was available; the IDS printers use a DB 25 connector for either serial or parallel communications, but the edge connector for the Osborne 1 was not available over the phone to hook up to the parallel port.

A survey of the **User's Reference Guide** from the Osborne 1 and the Owner's Manual from the Prism Printer indicated that I needed to use SETUP, a program on the Osborne CP/M System disk, to configure the computer to talk to the printer. I did this by putting that disk in drive A: and the WS disk in drive B:, and typing SETUP <CR>. The prompts in SETUP are self-explanatory; the selections I made included Diablo (XON/XOFF) serial protocol and 1200 baud. SETUP also allows you to assign values to the "special function keys", ^0 thru ^9. If you have not done it already, I suggest you load commonly used strings such as "LB:<CR>" and some others I will identify later.

After completing the setup of my WordStar disk, I hooked up the cable to the printer (I also set its jumpers and dip switches for serial data at 1200 baud) and turned it on--it worked! I did find it was necessary to cycle the OFF LINE/ON LINE switch sometimes, this turned out to be caused by the protocol I was using.

The Prism Printer is very "smart"; it knows when it has paper in it, for instance, and will not "go" without it. As long as you leave it off line (it may be turned on and hooked up) and put it on line only when you want to send it text or control codes, it will work fine.

I soon found that the programmable functions, described in Table 6-4 of the Owner's Manual, required sending "escape sequences" to the printer. WordStar does not seem to like non-printing characters like escape, so I went back to the books. The User Guide includes a section on "Modifying WordStar on the Osborne 1" by Thom Hogan starting on page A-1. This section describes a program named INSTALL which is on the CP/M Utility disk. INSTALL allows you to change the terminal, printer, communications protocol, and/or the print driver in the WS.COM program and also allows you to make byte by byte patches. In INSTALL you will find brief explanations are given of each option. Selecting one does not commit you to changing the WS program file — it allows you to "back out" of any selection before making it permanent. This lets you check out and read about all the options before you change anything. Try it.

I did not change the terminal selection (selection "U" is "no change"). I am using the Teletype-like printer option right now, selection "A", but selection "C" (backspacing teletype) works also. Since the protocol is handled outside of WS, the "no protocol" option and use of the CP/M List Driver seem to be the correct choices to INSTALLs third and fourth questions. On the other hand, I ran it for a while with XON/XOFF set in both WS and in CP/M and it still worked, so who knows?

At this point you will have indicated choices or "no change" (selection "U") to INSTALLs questions about the terminal, printer, communications protocol, and print driver. The nitty-gritty part comes next in the "special modifications" section. INSTALL allows you to add special character sequences to have your printer respond correctly to WordStar commands. These include half line advance, backspace, alternate character set, and so on, which may vary from one printer to the next. Each sequence is addressed by a label stored in INSTALL or by a four digit hex memory address. (I know of no complete index to these labels and addresses but real WordStar Reference Manuals or the Customization Notes probably explain them. Some are listed in the User Guide (mentioned below) and others have been identified in other **FOGHORN** articles.)

The Prism Printer responds to the standard ASCII codes for such commands as backspace, linefeed, and carriage return. It also will accept more complicated commands beginning with an escape character which establish the value of some functions, e.g., the size of a linefeed or the position of margins or tab stops.

Table 6-4, mentioned above, lists 15 programmable function parameters that may be set by sending various escape sequences to the printer. An example is the Left/Right Margin command: <escape> J, <left margin argument>, <right margin argument>, <command terminator>. The two argument values are the positions of the left and right margins in 120ths of an inch measured from the left-most printable character position on the printer. Escape is ASCII character 27 (decimal), or 1B (hex). The command character, J, and the argument values must be separated by comma or space characters. The terminator must be a non-numeric character other than comma or space; the dollar sign is suggested since it is a printing character, but a period or other character will work.

An example of the margin setting command sequence described above would be CHR$(27), J, 0, 780, $. This sequence would set the left margin at the left-most position and the right margin at 6 1/2 inches to the right. This sequence could be loaded into WordStar using the special modifications part of the INSTALL program, but requires at least 9 bytes of space.

A look at the "special modifications" labels and the space allotted to each on pages A-10 and A-11 of the User Guide shows that finding a place for this command could be difficult. The only area long enough is the initialization sequence which allows up to 16 characters. Putting this margin command there would require starting at the label PSINIT: and inserting the characters 09h, 1Bh, 4Ah, 2Ch, 30h, 2Ch, 37h, 38h, 30h, and 24h. These entries are facilitated by hitting RETURN for labels after the first one; INSTALL increments the label address by one when you hit RETURN instead of giving it a new label or an address. Only the two hex values for each character are typed in, the lower case "h" just identifies each as representing a byte in hex.

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Inspecting the example above may give rise to some questions. The first byte, 09h, is a cue to the WS program telling it the number of characters in this command string. 1Bh is the ASCII escape character and 4Ah is the ASCII code for "J" in hex. 2Ch is the comma used as a separator; 30h, 37h, and 38h, are the ASCII codes for the numbers "0", "7", and "8"; and 24h is "$". Although this sequence will fit here, it is not really very flexible.

You may want to set some of the codes that will fit such as PALT:, PSTD:, ROLUP:, ROLDOW:, and USR1: thru USR4:. Table 6-3 of the printer Owner's Manual lists the control codes for print mode, character size, type spacing and so on. PSTD: and PALT: could be used to switch between 10 cpi and 12 cpi densities (character sizes), for example. This would require the following:

```
PSTD:           01              Number of characters
PSTD:     +1   10              10 cpi density code for the Prism Printer
PALT:           01
PALT:   +1     1E              12 cpi density code
```

Using these codes in WordStar documents would require a ^PN for standard and ^PA for alternate density selection. ROLUP: and ROLDOW: could be loaded with 01h, 19h, and 01h, 14h respectively to allow printing subscripts and superscripts. The USRx: functions might be used to turn various combinations of proportional and justified print modes on and off, for example:

```
USR1:           02
USR1:   +1     04              Printer justify ON
USR1.   +2     10              Selects proportional spacing mode
USR2:           02
USR2:   +1     05              Printer justify OFF
USR2:   +2     06              Selects fixed spacing mode
```

These modes would be selected in the document by ^PQ and ^PW respectively. These could be split up into individual controls for each parameter if no other "user" functions were needed.

Most of the locations are not long enough to let WS pass escape sequences effectively to the printer. However, this section of INSTALL can also change any byte in the WS.COM program. Some things that are handy to change here are bytes that determine how WS configures itself on startup. The following address labels were consolidated from several **FOGHORN** articles reprinted in the **Portable Companion**.

ITITOG:	00	: Starts WS with INSERT OFF
INITWF: +1	00	: Starts WS with Justification OFF
ITPOPN.	FF	: Defaults to OMIT page numbers
WID:	78	: Sets terminal display screen width to 120 characters (max value without the warning message). Minimum value is 40 hex or 64 decimal.
038B	00	: Defaults to ruler line OFF
INITWF: +4	00	: Defaults to Hyphen Help OFF
ITHELP:	00	: Defaults Help level to 0 (03 is normal)
DEL3:	19	: Sets delay time in hex, delays the display of "help screens" longer or shorter as desired.
DEL4:		: is normally 40h.

After you have made any changes you want to try, make the last label/address a "0" (zero). INSTALL will give you one last chance to change your mind. If all is as you desire, INSTALL will save your modified WS.COM file on the drive you designated at the beginning. On my machine this takes a while, just wait till the drives quit turning. You can then try your creation by putting the WS disk in the default drive, give it a ^C, and then WS <CR>.

This brings me to the incredibly long program listing that follows the text of this article. MBasic allows sending any ASCII characters to the printer with an LPRINT CHR$(xx) statement, so I started writing a little program to make a few small computations, check them, and send them to the printer before starting a printing session. I guess I got carried away... .

I started out by LPRINTing the codes I wanted to send to the printer directly. This was a little cumbersome, so I added some routines to take an input page size and some margin sizes and figure the values for each programmable command argument from these inputs. I wanted to check what I had before I sent it to the printer, so I put in a PRINT (to the screen) section first. This eventually grew to the program listed here. You will note that decimal ASCII codes are easier to use in BASIC, so 1Bh (escape) is now CHR$(27).

PRINTER.BAS is a menu driven program that asks you for all the information needed to configure your printer. Margins and page sizes are put in in inches, much easier than thinking in 48ths and 120ths, and the program figures out the code needed by the printer to give you what you want. Not all the Prism Printer options are covered (since I don't have color in particular), but most are. It is more oriented to the sheet feeder, since that is what I use, but it will work with pin-feed paper also. It is mostly self-explanatory, but some comments may help you follow what I did and why.

The string variables starting at line 100 just make it easier to identify the program on a listing while using the same lines for a sign-on message. Most of the variables used are listed and explained in the next section. The first 17 are given "default" values in the process; these may be changed to whatever you like in most cases. The strings beginning with "D" are used to keep from having to type the same thing over again many times later in the program.

DEF FN is used to implement cursor positioning on the screen; CHR$(13) (CR without LF) in it just resets MBasics characters per line counter so that extraneous CRs are not inserted on the display.

Although the program grew with many revisions and modifications, I tried to keep the code "top down" as much as possible. There are a few conditional GOTOs that skip over parts that are sometimes not needed but only one major rerouting of the flow (1550 GOTO 950) is used. The rest of it is handled with GOSUBs which should allow easy understanding of what is going on.

I first wrote the section in lines 950 to 1310 to print the codes on the screen as they were to be sent to the printer, but that made it hard to see what you had. You could substitute the subroutine from line 4800 modified to PRINT instead of LPRINT and to display "<esc>" instead of CHR$(27) (which is non-printing on the display) at this location if you prefer to see exactly what you are sending to the printer. (Note that some boundary checks are made to keep from sending margins that are off the paper or negative values; these should be retained in some form.)

All of the "gotchas" I found in using WordStar with my Prism 132 are explained in the screen comments included in the program. The biggest ones come from attempting to use a smart text formatting program with an equally smart printer. WordStar knows the length of each page because you tell it (default PL is 66 lines), so it "knows" it must send that many linefeeds to get to the bottom of a page. If you leave the printers boundary skip switch ON, for example,it will cause text on subsequent pages to crawl down about an inch for each page. Similarly, if you change the size of the linefeed to something other than 8/48ths (6 lpi), following page formats will be wrong unless you redefine the page length to WS.

I have the Sprint Option which flies along at 200 cps in draft font. Correspondence font is printed at about 110 cps in FIXED spacing mode or up to 150 cps in PROPORTIONAL spacing. One thing included with the Sprint mode is a draft font character spacing of 13.3 cpi--the only way to get this spacing is not to send ANY character settings including size, font, or type spacing commands to the printer. Then, if the dip switches were set to the 13.3 size and draft font at printer turn-on, you can use that size characters. This caused some of the otherwise extraneous conditional statements in the LPRINT section (line 4800).

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If you use pin fed continuous paper you will use the printers FORM SET switch to set the top of form at the perforations. FORM SET is not required when printing with WordStar and sheet fed paper. To LLIST MBasic programs, FORM SET should be used to position the first printed line. Using FORM SET to put the first line some distance down the page subtracts that amount from the printable area with sheet fed paper (a 1" bottom margin remains at 1" in other words). Left/right margins can be controlled with a WIDTH LPRINT statement to list programs without setting margins at the printer. As long as you do not want the printer to justify your printing, WordStar margin controls will work fine for printing documents. If margins are set in the printer and WordStar sends a line that is too long, the printer will add an extra carriage return and print a dangler.

Microjustification is not supported between WordStar and the Prism Printer. To get proportional printing from the printer requires the printer justification ON and requires setting margins. I have found the most reliable method for using this capability is to compose the text in WordStar "N" (non-document) mode. This mode does not add CRs or LFs at the end of each line. The printer would rather do its own word wrapping in this mode anyway. The problem is that the number of characters per inch changes in the proportional print mode (they are much closer together), and there is no easy way to figure out where lines will end. The printer will justify lines ended with a CR, but they must be more than 75% of the margin width and no greater than the margin width. If you set a 6 1/2" printline, turn WS justification off, and use the default line length in WS of 65 characters you will find some lines spread out to cover the width of the page but most will be too short. In other words, the actual spacing you get in 10 characters per inch proportional is 12 or 13. Unfortunately, I have found no way to determine the resulting spacing accurately because it depends on what letters each line has; "i's" take up very little room compared to "m's". Any line with too many long letters in it may end up with the printer wrapping a word. Since WS inserted a CR/LF at the end of the line, the printer will leave a dangler while screwing up the page format with an extra linefeed that WS is not counting.

The bottom line about the printers proportional spacing mode is that it does it by itself very nicely, but WSs attempts at formatting are not very compatible. To print a non-document text file use PIP:

```
LST:=<drive:><filename>.<typ>.
```

ERAsing the SAMPLE.TXT file on the WS disk allows room for PIP with single density drives. PIP can then be used via the WordStar R command without leaving WS.

The prettiest justification from WordStar "D" mode files is to turn WS justifying OFF, leave the printer justifying ON and proportional OFF, and set the margins appropriately. This technique makes all spaces on each line equal. Don't forget to reformat (^B) the file if you wrote it with WS justification on. Paragraph indenting will vary some and tabular data will not line up exactly with justify ON because each line is stretched out a different amount to fill the width of the margins. One way around this problem is to set horizontal tabs for paragraph indenting or columns and use a special tab character in one of the "user" functions (set it up with INSTALL). Another way is to leave the justification off for numbers, lists, or other columnar data.

Configuring the printer with the PRINTER program is most easily accomplished by copying your MBasic disk, ERAsing the un-needed CBasic files, and putting a copy of PRINTER.BAS on that disk. When you are ready to print a document or file, save it with a ^KD. Take the disk with your text file out of drive B: and put the MBasic/PRINTER.BAS disk in its place. Use WordStar's "R" command to run a program and type MBASIC in response to the prompt. After MBasic is loaded type LOAD "PRINTER". After it has loaded type RUN and answer the programs menu questions. Do NOT select the "read last saved parameters" option the first time through because there will not be a PRINTER.DAT file to read; save the default parameters or your choices on that first run and it will create the data file for you. The printer must be ON LINE and have paper in it (FAULT light OFF) to accept the codes you send it. If everything stops when you send codes or text to the printer, just cycle the mode switch to OFF LINE and back to ON LINE to send a "go" signal to the CP/M List Driver protocol checker. When the printer has accepted the codes and you have the MBasic prompt back, remove the MBasic disk, put the document disk back in drive B:, and type the MBasic command SYSTEM. This will send you back to WordStar which asks you to hit any key, then it reloads itself. This process is very quick and easy if you program three "special function keys" on your WS disk (use SETUP) with the commands RMBASIC<CR>, LOAD "PRINTER",R<CR>, and SYSTEM<CR>. You must have drive B: logged in as default in WS for this procedure to work correctly as described (this assumes WS in drive A: and your text file is replaced with MBasic in drive B:).

That is all there is to it! I am sure you will want to change the program to do things your way, such as ignoring draft vs correspondence font if you do not have the Sprint mode or configuring the default values for use of roll paper rather than sheets if you don't have the sheet feeder. It should be relatively easy to change a copy from the FOG library (when it goes in) or as you key it in yourself. If you have some other type printer, this may give you some ideas on how to get it working the way you want. Have fun!

[*Major Dugle is an Air Force F-15 pilot presently attending school with the Army at Ft Leavenworth, KS*]

```
100 S1$=''*************PRINTER****************''
110 S2$=''   ''
120 S3$=''PRINTER configures the PRISM 80 or 132 for''
130 S4$=''software programmable parameters...''
140 S5$=''Brian C. Dugle, Major, USAF, 21 Nov 82''
150 S6$=''   ''
160 S7$=''************************************''
170 REM
180 REM *****INITIALIZE DEFAULT PARAMETERS******
190 REM
200 PW=8.5:          REM PW= page width (inches)
210 PL=11:             REM PL= paper length (inches)
220 PS=.25:          REM PS= paper offset from left edge printline (inches)
230 ML=1.5:          REM ML= left margin (inches)
240 MR=1:              REM MR= right margin (inches)
250 MB=0:              REM MB= bottom margin (inches)
260 CPI%=0:          REM CPI%= char per inch
270 PRPL%=0:          REM PRPL%= proportional selector
280 JUST%=0:          REM JUST%= justify selector
290 MODE%=2:          REM MODE%= print mode selector (normal/expanded)
300 FONT%=1:          REM FONT%= font selection
310 TH%=0:              REM TH%= number of horiz tabs
320 TV%=0:              REM TV%= number of vert tabs
330 LF%=8:              REM LF%= linefeed size (48ths)
340 N=0:                  REM N= initial paper feed (lines)
350 ROLUP%=4:        REM ROLUP%= superscript linefeed (48ths)
360 ROLDOW%=4:        REM ROLDOW%= subscript linefeed (48ths)
370                            REM B= linefeed input
380                            REM J%= gosub counter
390                            REM K%= counter for tab loop
400                            REM MB%= bottom margin position (48ths)
410                            REM ML%= left margin position (120ths)
420                            REM MR%= right margin position (120ths)
430                            REM S= temp tab position (inches)
440                            REM TBH%= horiz tab position (120ths)
450                            REM TBV%= vert tab position (48ths)
460                            REM V%= choice, configuration settings
470                            REM W$= Y/N answer
480                            REM X%= choice: print, change or quit, etc.
490                            REM
500 REM ****DEFINE PROMPT STRING CONSTANTS****
510 REM
520 D$=CHR$(26):REM Clear screen...
530 D0$=CHR$(27)+CHR$(84):REM Deletes to end of line...
540 D1$=''Use decimals for fractional margin and page sizes''
550 D2$=''Which choice?''
560            DEF              FNCURSOR$(YPOS%,XPOS%)=CHR$(13)+CHR$(27)+''=''
               +CHR$(YPOS%+31)+CHR$(XPOS%+31)
570                            REM ''YPOS'' is line number on screen, ''XPOS'' is
                                 column and CHR$(13) is <CR> without LF,
                                 resets MBasic Characters per Line counter...
580 D3$=D$+FNCURSOR$(10,2)
590 D4$=FNCURSOR$(12,2)+D0$
600 D5$=FNCURSOR$(15,2)
610 D6$=FNCURSOR$(20,2)
620 D7$=FNCURSOR$(23,2)
```

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```
700 REM
710 REM ******INITIALIZE PROGRAM******
720 REM
730 DIM TBV%(8)
740 DIM TBH%(21):REM This is the only subscripted variable with more than 10 values...
750 WIDTH 52: WIDTH LPRINT 255
760 REM
800 REM
810 REM ******FIRST SECTION - CHOOSE DATA******
820 REM
830 PRINT D$;FNCURSOR$(3,2);S1$:PRINT S2$:PRINT TAB(5) S3$:PRINT TAB(5) S4$
840 PRINT TAB(5) S5$:PRINT S6$:PRINT TAB(3) S7$
850 PRINT FNCURSOR$(11,5);
860 PRINT''Press:''
870 PRINT'' <1> to use default parameters''
880 PRINT'' <2> to read last saved parameters''
890 PRINT'' <3> to select all new print parameters''
900 PRINT D6$;D2$;:X0%=VAL(INPUT$ (1))
910 IF X0%<1 OR X0%>3 THEN PRINT''      <1>, <2>, or <3> response only
    please try again...'': GOTO 900
920 ON X0% GOSUB 2010,4610,2210
930 REM
940 REM ***CHECK CODES***
950 PRINT D$:PRINT
960 PRINT''Check the configuration codes:'':PRINT
970 PRINT'' Page size:'';PW;''X'';PL;''Left edge is set'';PS
980 PRINT''       inches left of 1st printable character''
990 PRINT'' Margins: left:'';ML;''right:'';MR;''and bottom:'';MB
1000 PRINT''       leaving'';PL-MB;''inches vertical space for text''
1010 ML%=INT((ML-PS)*120):IF ML%<0 THEN ML%=0
1020 MR%=INT((PW-PS-MR)*120):IF MR%>((PW-PS)*120)THEN MR%=(PW-PS)*120-15
1030 M=(MR%-ML%)/120:IF CPI%=0 THEN CPI=13.3
1040 IF CPI%=29 THEN CPI=10
1050 IF CPI%=30 THEN CPI=12
1060 IF CPI%=31 THEN CPI=16.8
1070 M1=M*CPI
1080 PRINT'' Printline is'';M;''inches long, or'';M1;''characters''
1090 PRINT''       at'';CPI;''fixed spacing''
1100 IF TH%<=0 THEN PRINT'' No horizontal tabs set'':GOTO 1170
1110          PRINT'' Horizontal tabs set at:'';
1120          FOR K%=1 TO TH%
1130                          PRINT TBH%(K%)/120;
1140                          IF TH%-K%=1 THEN PRINT''and'';
1150          NEXT
1160          PRINT''inches from zero print position''
1170 IF TV%<=0 THEN PRINT'' No vertical tabs set'':GOTO 1240
1180          PRINT'' Vertical tabs set at:'';
1190          FOR K%=1 TO TV%
1200                          PRINT TBV%(K%)/48;
1210                          IF TV%-K%=1 THEN PRINT''and'';
1220          NEXT
1230          PRINT''inches from top of form''
1240 PRINT'' Print mode: '';:IF MODE%=2 THEN PRINT''Normal'' ELSE PRINT''EXPAND''
1250 PRINT'' Font:'';FONT%;''is '';:IF FONT%=1 THEN PRINT''Correspondence'' ELSE
     PRINT''Draft''
1260 IF CPI%=0 THEN PRINT'' No character size set, printer defaults to SWs 1 and 2 or
     last software setting'' ELSE PRINT'' Char code:'';CPI%;'' (29=10cpi, 30=12,
     31=16.8)''
1270 PRINT'' Proportional print '';:IF PRPL%=1 THEN PRINT''ON'' ELSE PRINT''OFF''
1280 PRINT'' Justified print '';:IF JUST%=1 THEN PRINT''ON'' ELSE PRINT''OFF''
1290 PRINT'' Linefeed set to'';LF%;''48ths inches, or'';48/LF%;''lpi''
1300 PRINT'' Initial paper position'';N;''lines from top''
```

* * * * *

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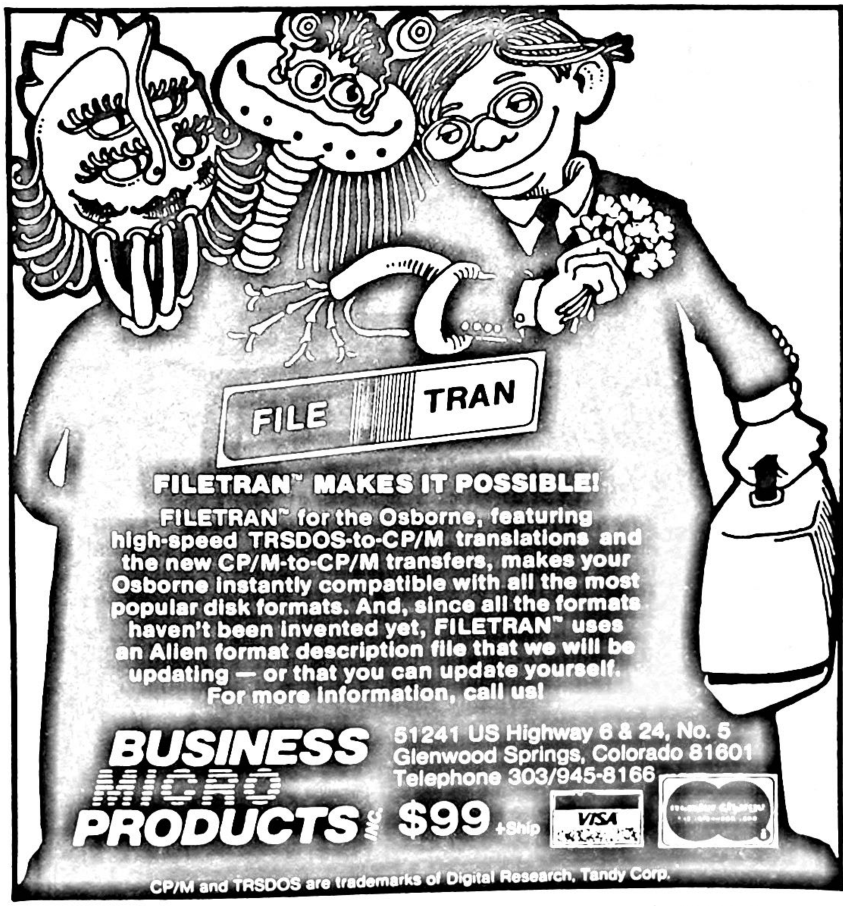

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```
1310 PRINT D7$;''Are the settings correct <Y/N>?'';:W$=INPUT$ (1)
1320 IF W$=''Y'' OR W$=''y'' GOTO 1610
1330 REM
1400 REM ***SELECT CODES TO CHANGE***
1410 PRINT D$:PRINT
1420 PRINT''Select which configuration to set:'':PRINT
1430 PRINT'' <1> Paper Size''
1440 PRINT'' <2> Margins (left, right, bottom)''
1450 PRINT'' <3> Tab settings (horiz and vert)''
1460 PRINT'' <4> Print Mode''
1470 PRINT'' <5> Character size/Font''
1480 PRINT'' <6> Proportional print''
1490 PRINT'' <7> Justification (at printer)''
1500 PRINT'' <8> Initial paper feed''
1510 PRINT'' <9> Linefeed size (incl sub/supr script)''
1520 PRINT'' <0> All''
1530 PRINT D6$;D2$;:V%=VAL(INPUT$ (1))
1540 PRINT D3$;:ON V%+1 GOSUB 2210,3310,3110,4110,3710,3510,3810,3910,4010,4410
1550 GOTO 950:      REM Return to display to check values...
1580 REM
1590 REM ******SEND OR SAVE GOOD DATA******
1600 REM
1610 PRINT D3$;''Do you want to send these to the printer or save'':PRINT'' on disk?''
1620 PRINT'' <0>=No, quit''
1630 PRINT'' <1>=Yes, just save these settings on disk''
1640 PRINT'' <2>=Yes, just send to printer, do not save''
1650 PRINT'' <3>=Yes, send to printer and save on disk''
1660 PRINT D6$;D2$;:X1%=VAL(INPUT$ (1))
1670 IF X1%<0 OR X1%>3 THEN PRINT''      <0>, <1>, <2>,or <3> only
     please...'': GOTO 1660
1680 ON X1%+1 GOSUB 2010,5210,4810,2110
1690 END
1700 REM ******CONTROL SUBROUTINES******
2000 REM
2010 RETURN:REM Goes back to display section without changing default settings...
2090 REM
2100 REM ***SEND & SAVE***
2110 GOSUB 4810:REM First LPRINT to Printer...
2120 GOSUB 5210:REM Then save on disk...
2130 RETURN
2190 REM
2200 REM ***LOOP THRU ALL INPUTS***
2210 FOR J%=1 TO 9
2220 ON J% GOSUB 3310,3110,4110,3710,3510,3810,3910,4010, 4410
2230 NEXT
2240 RETURN
2990 REM
3000 REM ******INPUT/CHANGE SUBROUTINES******
3090 REM
3100 REM ***MARGINS***
3110 PRINT D3$;''Select the margins desired:''
3120 PRINT'' <1> left= 1, right= 1, bottom= 0 (WordStar)''
3130 PRINT'' <2> left=.5, right=.5, bottom=.8 (LLISTs)''
3140 PRINT'' <3> Other''
3150 PRINT D6$;D2$;:X2%=VAL(INPUT$ (1))
3160 IF X2%<1 OR X2%>3 THEN PRINT''<1>, <2>, or <3> only please...'':GOTO
     3150
3170 IF X2%=1 THEN ML=1:MR=1:MB=0
3180 IF X2%=2 THEN ML=.5:MR=.5:MB=.8
3190 IF X2%<>3 GOTO 3250
3200 PRINT D3$;D1$
3210 PRINT D4$;:INPUT''Left margin SIZE desired: <in>; <CR>'';ML
3220 PRINT D4$;:INPUT''Right margin SIZE desired: <in>; <CR>'';MR
3230 PRINT D5$;''Use a bottom margin for printing program listings'':PRINT''and so on,
     leave at zero for printing WordStar'':PRINT''documents''
3240 PRINT D4$;:INPUT''Bottom margin SIZE desired: <in>; <CR>'';MB
3250 RETURN
3290 REM
3300 REM ***PAPER SIZE & POSITION***
3310 PRINT D3$;''Select the paper size:''
```

```
3320 PRINT'' <1> Single sheet 8.5 x 11, at 'C' mark''
3330 PRINT'' <2> Single sheet 8.5 x 14''
3340 PRINT'' <3> Other''
3350 PRINT D6$;D2$;:X3%=VAL(INPUT$ (1))
3360 IF X3%<1 OR X3%>3 THEN PRINT''<1>, <2>, or <3> only please...'':GOTO
     3350
3370 IF X3%=1 THEN PW=8.5:PL=11:PS=.25
3380 IF X3%=2 THEN PW=8.5:PL=14:PS=.25
3390 IF X3%<>3 GOTO 3490
3400 PRINT D3$;D1$;
3410 PRINT D4$;:INPUT''Paper width <inches>; <CR>'';PW
3420 PRINT D5$;''Input the position of the left edge of the paper''
3430 PRINT''from the leftmost print column.      A positive value''
3440 +PRINT''may be read directly from the gage if you have the''
3450 PRINT''sheet feeder.''
3460 PRINT D4$;:INPUT''Paper edge position <inches>; <CR>'';PS
3470 PRINT D3$;D1$;D5$;''This length must agree exactly with WordStar
     to'':PRINT''avoid text creeping up or down on succeeding pages''
3480 PRINT D4$;:INPUT''Paper length <inches>; <CR>'';PL
3490 RETURN
3500 REM ***CHARACTER SIZE & FONT***
3510 PRINT D3$;''Character size:''
3520 PRINT'' <0>=None (old or default value)''
3530 PRINT'' <1>=10 cpi''
3540 PRINT'' <2>=12 cpi''
3550 PRINT'' <3>=16.8 cpi''
3560 PRINT D6$;D2$;:CPI%=VAL(INPUT$ (1))
3570 IF CPI%<0 OR CPI%>3 THEN PRINT''      <0>, <1>, <2>, or <3> only
     please...'': GOTO 3560
3580 IF CPI%>0 THEN CPI%=CPI%+28
3590 PRINT D3$;''Font:''
3600 PRINT'' <1> for correspondence''
3610 PRINT'' <2> for draft''
3620 PRINT D6$;D2$;:FONT%=VAL(INPUT$ (1))
3630 IF FONT%<1 OR FONT%>2 THEN PRINT''      <1> or <2> only please...'': GOTO
     3620
3640 RETURN
3690 REM
3700 REM ***PRINT MODE***
3710 PRINT D3$;''Mode:''
3720 PRINT'' <1> for EXPANDED (doublewidth) characters''
3730 PRINT'' <2> for NORMAL characters''
3740 PRINT D6$;D2$;:MODE%=VAL(INPUT$ (1))
3750 IF MODE%<1 OR MODE%>2 THEN PRINT''      <1> or <2> only please...'': GOTO
     3740
3760 RETURN
3790 REM
3800 REM ***PROPORTIONAL***
3810 PRINT D3$;''Do you want the print PROPORTIONAL <Y/N>'';:W$=INPUT$ (1)
3820 IF W$=''Y'' OR W$=''y'' THEN PRPL%=1 ELSE PRPL%=0:REM Only Y or y response evaluat-
     ed, all others result in ''No'' response...
3830 RETURN
3900 REM ***JUSTIFIED***
3910 PRINT D3$;''Do you want the print JUSTIFIED <Y/N>'';:W$=INPUT$ (1)
3920 IF W$=''Y'' OR W$=''y'' THEN JUST%=1 ELSE JUST%=0
3930 RETURN
3990 REM
4000 REM ***INITIAL LINEFEEDS***
4010 PRINT D$;D5$;''If you have a listing program that inserts linefeeds''
4020 PRINT''to skip over perforations, putting about half that''
4030 PRINT''number of linefeeds here allows equalizing the top''
4040 PRINT''and bottom margins.      Do not use this for WordStar''
4050 PRINT''documents--you can also use Form Set to set the top''
4060 PRINT''line position for listing programs, but do not use''
4070 PRINT''it in WordStar.''
4080 PRINT FNCURSOR$(10,2);:INPUT''Number of linefeeds to position paper;
     <CR>'';N
4090 RETURN
```

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```
4100 REM ***TABS HORIZ/VERT***
4110 PRINT D3$;
4120 INPUT''HOW MANY horizontal tabs (0 to 21): <CR>'';TH%:IF TH%<=0 GOTO 4210
4130 IF TH%>21 THEN PRINT''     The max number of horizontal tabs is 21, try
     again...'': GOTO 4120
4140 PRINT:PRINT''Identify tab positions from the left edge of the''
4150 PRINT''paper, in order'':PRINT
4160 FOR K%=1 TO TH%
4170          PRINT''Tab #'';K%;''(inches from left);<CR>'';:INPUT S
4180          TBH%(K%)=INT((S-PS)*120)
4190          IF K%>1 THEN IF TBH%(K%-1)>TBH%(K%) THEN PRINT''Tabs must be in left
              to right (small to large) order'':GOTO 4170
4200 NEXT
4210 PRINT D3$;
4220 INPUT''HOW MANY vertical tabs (0 to 8): <CR>'';TV%:IF TV%<=0 GOTO 4310
4230          IF TV%>8 THEN PRINT''The max number of vertical tabs is 8, try
              again..'': GOTO 4220
4240          PRINT:PRINT''Identify tab positions from the top edge''
4250          PRINT''of the paper, in order.'':PRINT
4260 FOR K%=1 TO TV%
4270          PRINT''Tab #'';K%;''(inches from top): <CR>'';:INPUT S
4280          TBV%(K%)=INT(S*48)
4290          IF K%>1 THEN IF TBV%(K%-1)>TBV%(K%) THEN PRINT''Tabs must be in top
              to bottom (small to large) order'':GOTO 4270
4300 NEXT
4310 RETURN
4390 REM
4400 REM ***LINEFEED SIZES***
4410 PRINT D3$;''Linefeed is'';LF%;''48ths, select:''
4420 PRINT'' <0> No change, leave at above or''
4430 PRINT'' <1> Change in inches per linefeed or''
4440 PRINT'' <2> In lines per inch (lpi) or''
4450 PRINT'' <3> In 48ths of an inch''
4460 PRINT D6$;D2$;:V%=VAL(INPUT$ (1)):PRINT
4470 IF V%<0 OR V%>3 THEN PRINT''<0>, <1>, <2>, or <3> only please...'':
     GOTO 4460
4480 PRINT D6$;:ON V%+1 GOTO 4540,4490,4510,4530
4490 INPUT''Size of linefeed in inches: <CR>'';B
4500          LF%=INT(B*48):GOTO 4540
4510 INPUT''Number of lines per inch: <CR>'';B
4520          LF%=INT(48/B+.5):GOTO 4540
4530 INPUT''Number of 48ths inch per linefeed: <CR>'';LF%
4540 PRINT D3$;''The printer is set to use a half linefeed (4 48ths'':PRINT''inches)
     for subscripts and superscripts.''
4550          PRINT D5$;''Do you want to change these <Y/N>?'';:W$=INPUT$ (1)
4560          IF W$=''Y'' OR W$=''y'' THEN PRINT''How many 48ths (<0> to
              <9>)?'';
              :R%=VAL(INPUT$ (1)):ROLUP%=R%:ROLDOW%=R%
4570 RETURN
4590 REM
4600 REM **INPUT FROM DISK FILE ''PRINTER.DAT''**
4610 OPEN ''I'',#1,''PRINTER.DAT''
4620 INPUT#1,PL,PW,PS,ML,MR,MB,TH%,TV%,LF%,ROLUP%,ROLDOW%,FONT%,MODE%,CPI%,
     PRPL%,JUST%
4630 IF TH%<1 GOTO 4670
4640          FOR K%=1 TO TH%
4650                              INPUT#1,TBH%(K%)
4660          NEXT
4670 IF TV%<1 GOTO 4710
4680          FOR K%=1 TO TV%
4690                              INPUT#1,TBV%(K%)
4700          NEXT
4710 CLOSE#1
4720 RETURN
4790 REM
4800 REM ***LPRINT CODES TO PRINTER***
4810 LPRINT CHR$(27)+''J'',ML%,MR%,''$'';
4820 LPRINT CHR$(27)+''R'',FONT%,''$'';
4830 IF CPI%<>0 THEN LPRINT CHR$(CPI%);
4840 LPRINT CHR$(27)+''L'',(INT((PL*48)+.5));:IF MB<>0 THEN LPRINT (INT((PL-
     MB)*48));
4850          LPRINT''$'';
4860 IF PRPL%=1 THEN LPRINT CHR$(16); ELSE IF CPI%<>0 THEN LPRINT CHR$(6);
4870 IF JUST%=1 THEN LPRINT CHR$(4); ELSE IF CPI%<>0 THEN LPRINT CHR$(5);
4880 LPRINT CHR$(27)+''B'',LF%,''$'';
4890 IF ROLUP%=4 AND ROLDOW%=4 GOTO 4920
4900          LPRINT CHR$(27)+''C'',ROLDOW%,''$'';
4910          LPRINT CHR$(27)+''D'',(-ROLUP%),''$'';
4920 IF N<1 GOTO 4970
4930          WHILE N>.5
4940                              LPRINT CHR$(10);
4950                              N=N-1
4960          WEND
4970 IF TH%<1 GOTO 5030
4980          LPRINT CHR$(27)+''F'';
4990          FOR K%=1 TO TH%
5000                              LPRINT TBH%(K%);
5010          NEXT
5020          LPRINT''$'';
5030 IF TV%<1 GOTO 5090
5040          LPRINT CHR$(27)+''E'';
5050          FOR K%=1 TO TV%
5060                              LPRINT TBV%(K%);
5070          NEXT
5080           LPRINT''$'';
5090 LPRINT CHR$(MODE%);
5100 RETURN
5190 REM
5200 REM ***SAVE IN FILE ''PRINTER.DAT''***
5210 OPEN ''O'',#1,''PRINTER.DAT''
5220 WRITE#1,PL,PW,PS,ML,MR,MB,TH%,TV%,LF%,ROLUP%,ROLDOW%,FONT%,MODE%,CPI%,
     PRPL%,JUST%
5230 IF TH%<1 GOTO 5270
5240          FOR K%=1 TO TH%
5250                              WRITE#1,TBH%(K%)
5260          NEXT
5270 IF TV%<1 GOTO 5310
5280          FOR K%=1 TO TV%
5290                    WRITE#1,TBV%(K%)
5300          NEXT
5310 CLOSE#1
5320 RETURN
5330 END
```

• • • • • • •

Subscripts and Superscripts in WordStar with the NEC 8023 Printer

by Charles Goodman

Those of you who are using the half line feed method of printing subscripts and superscripts on the NEC 8023 printer using the installation given in an early issue of **FOGHORN** might have noticed that if you call for a subscript on one line and a superscript on the next line the superscript will not be raised. A solution to this is to install locations ROLUP: and ROLDOW:, leaving the rest of the half line feed patching as it is. I found, however, that there was not enough space in ROLUP: to accommodate the byte string required and hit on the following solution:

ROLUP: requires five bytes to reverse the paper feed direction, issue a line feed and reset the paper direction. (The feed direction must be reset or the paper will continue to go backwards after a subscript is printed.)

ROLDOW: requires only one byte, a line feed.

ROLDOW: is located at ROLUP: + 5.

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I, therefore, overlayed the two command strings as follows:

```
ROLUP:          07H     Transfer 7 bytes.
                          1BH     Reverse
                          72H         paper feed direction.
                          0AH     Line feed.
                          1BH     Dummy command with 03.
ROLDOW:        03H     Transfer 3 bytes.
                          1BH     Reset paper feed
                          66H         direction to forward.
                          0AH     Line feed.
```

When ROLUP: is executed, the 1B,03 sequence is ignored by the printer. When ROLDOW: is executed, the 03 serves to indicate the number of bytes to be transmitted to the printer.

In order to make this work it is necessary to be in the "incremental" mode. To set the incremental mode, the sequence 1B,5B should be added to whatever string you may already have in location PSINIT:

Reversed paper feed works best if the printer is set for friction feed.

In the incremental mode bidirectional printing does not take place and the print head will return to the left margin after every line. This slows things down. I have, therefore, found it convenient to keep two copies of WordStar on my diskette, one installed with the half line feed patches, and one with the normal full line feed installation. The overlays need not be duplicated. You can, for example, name the normal version WS.COM as usual and the other WSSUBSCR.COM. The extra COM file will easily fit on a double density disk. Use WS.COM for ordinary letters, etc., but exit and call WSSUBSRC.COM when you need to print a document containing subscripts and superscripts.

You can also invoke many of the special features of the printer by sending the byte string to the printer before you load WordStar. This will work if you have not patched an initialization into the string PSINIT: that overrides what you are now trying to do. For example, assume you are in WordStar with the disk in drive A: Exit from WordStar with the command X. Then:

```
 A> ^P<ESC>Q<return>
A> WS<return>
```

Now, when you are back in WordStar, print a file. You will find it printed at 17 cpi.

Those of you who have not yet tried subscripting and superscripting with the NEC 8023 printer might like to try the following installation. Invoke INSTALL per instructions in the Osborne manual. At the appropriate place select "half line feed printer." Finally, when you are asked ARE THE MODIFICATIONS TO WORDSTAR NOW COMPLETE?, answer "no." For location to be changed answer PSINIT: and patch in the following:

```
PSINIT:               07H     7 bytes to be sent.
                                0DH     Carriage return.
                                1BH     Set line
                                 54H         spacing
                                 31H         to 12/144
                                32H         of an inch.
                                 1BH     Enter incremental
                                 5BH-         mode.
```

Press return repeatedly until location to be changed shows PSINIT: + 11H. (This is PSFINI:) Then enter the values:

```
  04H        4 bytes to be sent.
1BH     Reset to line
41H         spacing of 1/6 in.
1BH     Enter logic
5DH         seeking mode.
```

Check PSCRLF:. It should read: 03,0D,0A,0A or 03,0D,1F,12. This issues a double space command for ordinary lines since we have set the line height to 1/12 in. Retain or reenter any other patches you might have had in your previous installation. INSTALL erases some patches when a new option is selected, so check any locations that you might have patched previously and restore them if necessary. Now you are ready to print a document with subscripts and superscripts as signalled by the standard control codes in WordStar.

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Notes for Fine Tuning Your System

by Dal Allan

There have been several letters written regarding printers and the use of WordStar, so below is one owner's story of learning how to cope with WordStar, printers, and setting up disks for convenience.

When I started using WordStar I found that the standard initial options were unsuitable and so spent time at every load running through the necessary ^O functions to get it the way I wanted. Next I graduated to using Special Function Keys to automatically enter them, and then I discovered a listing of the buckets which dictate how WordStar will run. This listing is now available to all who have the December-January issue of Portable Companion (see p86). My first efforts at changing WordStar were done with INSTALL but this is a tiresome business.

Jim Woolley's writeup on how to install the NEC printer was the guideline to installing my Prowriter, but once again meant wading through INSTALL, so I switched to DDT. Enter WSPATCH by Lee Swordy — available in the FOG library. This program was designed to modify the use of the WordStar cursor keys and blink the cursor to make roaming around the Osborne screen looking for your cursor just a mite easier. Here was a program that read WS.COM into memory, modified it, and wrote it back — what better but to use it as a basis for adding the code to install Prowriters and modify the WS buckets to bring it up the way I liked.

Assembler programming is not my forte, but eventually DALSPACH got running - it has been submitted to the FOG library and what it does is install the Jim Woolley printer routines for the NEC and Prowriter as well as modify the intialization attributes to bring up WS. If any of you need this sooner than it will be available through the library, send $3 to me at P.O. Box 2161, Saratoga, CA, to cover the cost of the diskette and I will send you a copy.

Arthur Fore had a letter in November asking about how to use the Greek character set on his Prowriter. The Prowriter has two methods of printing Greek and other extended character sets, either as 8 bits extended mode, or with a special 7 bit mode. The easiest way to do so with WordStar is to set Dipswitch SW2-6 closed and use the User Print Controls E and R to flip between Greek and ASCII by using the Escape Sequences defined in the manual. Assuming you have Jim Woolley's article in the 5/82 **FOGHORN**, at USR3 (06D3) enter 02 1B 26 and at USR4 (06D8) enter 02 1B 24. Now, ^E will set the mode to Greek characters — reference the 7-bit Greek character set in your manual (Table 9-6 in mine) and substitute the ASCII character for the equivalent Greek character e.g. Beta is hex 21 which in the ASCII table is !, Infinity is K. Note, when you set 2-6 Closed you must substitute 2D for SOCHR (070B) and 5F for ULCHR (070C).

Now as to setting up disks, some day in the future single density owners will look back and wonder how they could possibly be so pre-occupied with saving disk storage, but as all of us know, every 2K counts. In addition, nothing bothered me more than CP/M doing a warm boot to one of my work disks and filling the screen with rubbish while it blared the beeper at me. Following are my recommendations on how to set up your disks:

I set up my CP/M disk to execute a DIR instead of AUTOST, because this gives me a listing of what is on my disk instead of always getting that logo — it also saves 2K, since there is no need for AUTOST.COM. There are two ways to get DIR instead of AUTOST — one is to use the FOG Library program SETAUTO.COM but if you do not have that it can be done with SETUP and DDT as follows (make sure you use a copy that is not file-protected):

```
   Put CP/M disk with DDT and SETUP in Drive A
          Issue A:DDT A:SETUP.COM<CR>
When DDT loads SETUP it returns control to you
          Issue G,318<CR>
SETUP will begin to work in its normal way
          Issue A
          Issue X
DDT will stop at address 0318 and give back control
          Issue D,2000<CR>
You will see AUTOST beginning in location 200B
          Issue S200B<CR>
DDT will feed you one character at a time to change
          Issue 44<CR>
          Issue 49<CR>
          Issue 52<CR>
          Issue 00<CR>
          Issue .<CR>
          Issue G<CR>
DDT will return control to the SETUP program and respond
          Issue A
SETUP will write to Drive A
Drive A now contains DIR instead of AUTOST
Reset Osborne
Boot Drive A and you will get a DIR instead of AUTOST
```

This gives a "master boot" disk to which I add the Special Function Keys which are common across all my disks:

```
5 *.*<CR>
9 A:<CR>        The blank in first position is necessary so that 0 B:<CR>
                SFK can be a modifier e.g. X<CTRL>9 = X A:<CR>
```

To prepare data disks (assuming I have new disks to create). I format the first one using COPY, then I use SYSGEN to write an image of the "master boot" to it. Then using that as the original, I format the others by COPYing from the original, so that all have been formatted and have an image of the "master boot". The boot image on every disk means you should never have to experience the screen filling up with weird characters and the beeper going off when CP/M does a Warm Start to a work disk.

I like each disk to be identified, so I use the CP/M command SAVE to write a filename of 0K on each disk. You can use any combination of characters you prefer in the filename — I usually just number work disks serially. To create a 0K disk:

```
Issue SAVE 0 drive:-xxxxxxx.yyy
```

On system disks such as SuperCalc, WordStar, CP/M, BASIC the only common files are X.COM (a 2K version of XDIR available in the FOG library, and PIP.COM. By using the technique described above for DIR, it is possible to replace AUTOST with the name of the program to be booted, then you can delete AUTOST on every disk.

I should point out that the above description applies only to single density Osbornes — I suspect the suitable addresses in SETUP have changed in the Double Density machine; although a little bit of experimentation should allow one to come up with the new addresses.

• • • • • • •

Note on Sending Control Codes to a Printer

by Charles Goodman

Although WordStar will allow you to imbed within a file all control codes from ^A (=01H) to <escape> (=1BH) except ^Z (1AH), many of these codes will not be transmitted to the printer when the file is printed by WordStar. Some of the control codes are trapped in the printing section of WordStar and interpreted as special control codes for the program. Of course, control strings may be patched into WordStar using the locations USR1: etc., but if you find yourself needing to use a special printer code that you don't happen to have patched into your copy of WordStar, you might find the following dodge useful.

Suppose, for example, you have a document of simple text (no subscripts, etc.) formatted in the normal way in single space and you would like to print it in enlarged characters, double space on a NEC 8023 printer. Do the following:

1. Load WordStar and bring in the document for editing with the D command.
2. Insert a line at the very beginning of the document with the control codes for enlarged characters (^N) and line height 1/3 in (<escape>T48). To enter these codes you type ^P^N^P<escape>T48<return>.
3. Store the document on disk with the usual command ^K^D.
4. Now exit from WordStar. (Type X)
5. Load PIP, and after the * prompt type:

   ```
   LST:=B:filename[ZP30]
   ```

   This command tells PIP to transfer your file from disk B to the printer, setting bit 7 to zero in every character and inserting a page break every 30 lines.

→ → →

Try it. You'll probably find that your lines are too long for the enlarged character mode, but you'll see something dramatic. You can fix the margins if you want to. You'll like the freedom to use any control codes your printer will recognize. Of course, if you simultaneously need the special print formatting features of WordStar, this won't be your solution, but you might find this trick handy for printing double spaced drafts or for accessing unusual printer features.

You can have more fun if you type (after the * prompt in PIP) LST:=CON:. This will make your Osborne and printer act like a typewriter. If your printer is an NEC 8023, type <escape>[<return> and it will print character by character thereafter until you type <escape>]. This use of PIP is handy for trying out obscure control codes that are not well described in the printer manual.

• • • • • • •

Parallel Printer Cable

by Alan H. Nelson

To my mind, the biggest ripoff in the Osborne peripheral industry is the parallel printer cable at a cost of somewhere around $50.00. I knew I could purchase a Centronics plug at full list price for about $7.00, 12-wire cable at 10 cents a foot from my local electronics store, and an IEEE plug for a couple of dollars: with parts amounting to about $10 retail, and perhaps $5.00 wholesale, the cable manufacturers were apparently charging about $45 just for the soldering job.

Once I decided to make my own cable, everything went smoothly until I looked for a 26-pin IEEE plug (0.10 inch centers). None of the local Osborne dealers had them. The local electronics store didn't have them; HW Electronics in Northridge didn't have them; none of the four Jade outlets throughout California had them. I decided that either the 26-pin plug was a rare bird to begin with, or the cable manufacturers cornered the market just to force me to buy a $50 cable from them, or all the other Osborne owners had beat me to it.

The solution, once it occurred to me, was simple: I purchased a plug with more than 26 pins and cut off the high-number end with side-cutter pliers. Even though this was not an elegant way to manage the job, it worked fine, but if I were to do it again, I'd try using a hacksaw instead of the side-cutters. In any case, only a few pins, on the right side of the plug (as you look at your Osborne), are used, so one or two mangled pins at the far end don't matter.

When I first tried my new Epson MX-80 printer with my new cable, the printer seemed to work fine, but when I looked closer I discovered that the wrong letters were being printed. I had followed the wiring instructions in Osborne's spiral-bound manual. I had to figure out for myself how to correct the erroneous information printed there. The errors have also been discovered by Osborne, and are corrected in the sheets accompanying the 1.3 upgrade, and no doubt in other sources as well.

Here is the corrected wiring diagram. Happy soldering!

IEEE (Osborne)	Centronics (Epson)
1	2
2	6
3	3
4	7
5	4
6	8
7	5
8	9
11	1
12	19
15	11
19	13

• • • • • • •

* *

FOG MEMBER ANNOUNCEMENTS

* *

HELP! I am looking for someone who has run a T S P (Time Series Processor) on the Osborne 1. TSP is used primarily by economists for running regressions etc. [*not a cookbook abbreviation ...David*]. If you have use a TPS on an Osborne, know anyone who has, or have any information on the subject, please contact Tetteh Kofi at 2030 Park Blvd., Palo Alto, CA 94300, (415) 327-2452.

• • • • • • •

To any and all FOG members in the Glen Burnie, Severna Park and Annapolis area who would like to set up a local FOG group: If interested please drop me a note at the following address:

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• • • • • • •

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LIBRARY NEWS

Where Can We Get a Copy of the Library?

Below is a list of those persons who are listed as having a copy of at least a major part of the current FOG disk library. We will repeat and update this list whenever there is space or a number of new listings. If you have a copy of the library and are not listed here, please let us know immediately. Also, if your are incorrectly listed, please let us know that as well.

Please send all corrections, additions, comments, questions, etc. to P. O. Bo› 3051, Daly City, CA, 94015. Mark your envelope " LIBRARIAN ".

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Maurice Bauhahn — World Vision Project
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Eleanor Kobrin
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Howard I Podell
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Dr John V Schmitz
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FOG Disk Library News

by Jim Woolley

Several people have mentioned that the TEACH morse code training program found on FOG/APP.006 does not work on their computer. When originally installed, it did work on mine. Since then, my machine has been upgraded, and the program no longer rings my bell. This situation has been corrected; see FOG/APP.017 described below.

Toby Fredrickson pointed out an error in MADLIBS.BAS found on FOG/GAM.010. It appears that the file does not have a proper end.

I appreciate this feedback. Before each program is installed in the library, I test it to determine if it will run on my Osborne 1, how to run it, and what category seems most appropriate. The test is quick and dirty. There is no attempt to verify that answers are correct or that all options function. If the program does not work but corrections can be easily made, I make them. Otherwise, I install the program in the Hackers (/HAK) category. Programs are also placed in Hackers if results are suspect or if it does not appear worth the effort to assemble the file. You are invited to test/correct programs in the Hackers category and resubmit them for installation in one of the more legitimate categories.

Disks introduced during March include FOG/APP.017 and FOG/HAK.007 thru .014. Following is a synopsis of DISK.DOC files from each of these new library disks:

FOG/APP.017

This disk contains a system for extracting file names from a disk directory and maintaining a database of the names. It may be useful for cataloging your personal disk library. (Also, see the CATALOG system found on FOG/UTL.002.) Paul Trainer submitted DRECTORY for managing the directory database and DSORT to sort it.

TEACH2 is a revision of TEACH found on FOG/APP.006. This is a program to teach Morse code. To sound the bell, TEACH used a method for entering "shadow ROM mode" which is invalid on the newer Osborne's. TEACH2 resolves this problem.

FOG/HAK.007

This disk contains several floating-point arithmetic routines from CPMUG.029. FPCONV, FPDATA, FPINT, FPPKG, and TRAN.SQC are squeezed assembly language source files.

MAKSUB is an example of how one .COM command file may chain to another.

MEGATREK is an extra large version of STARTREK. It would not fit into the space available within MBASIC. See MEGATREK.DOC.

MLIST3 and VLIST11 were both submitted by Gale Rhoades. They will display a file on the CP/M list device, like LIST found on FOG/UTL.002. Each uses MAC and SEQIO.LIB found on FOG/HAK.004.

FOG/HAK.008

Files on this disk were submitted by Byron McKay.

MBOOT3OS is an Osborne version of MBOOT, a program intended for use when no better terminal emulator is available. Since there are several terminal emulators in the Utilities category (e.g., MODEM7 on FOG/UTL.001), this program does not seem necessary.

MODEM781 is one of the more recent versions of MODEM7. It uses MODEM780.LIB and MAC for assembly. MCAL780 permits revision of the telephone directory.

FOG/HAK.009

LOSTGOLD is a BASIC game which needs repair.

PIPMODEM describes use of PIP as a terminal emulator.

The remaining files were submitted by Byron McKay.

RECV and SEND permit transfering files between two computers.

SMODEM39 is a source file for the Hayes SmartModem version of MODEM7. An Osborne compatible SMODEM4 may be found on FOG/UTL.021.

FOG/HAK.010

COPYFAST, from CPMUG.047, is for quickly copying from one disk to another.

DIAL6/23 and FLIP3, also from CPMUG.047, will dial and change baud rate when used with a PMMI modem.

The remaining files were submitted by Byron McKay.

PMMIBYE3, from CPMUG.040, is a PMMI version of the BYE program used by remote bulletin board systems (RBBS).

RBBS30 is a BASIC language RBBS control program. It uses MENURBBS and NEWCOM files.

FOG/HAK.011

FINDBAD.MAC is a source file for the bad sector lockout program found on FOG/UTL.005.

KID permits definition of keyboard macros (programmable function keys) using any key. Essentially, the keyboard layout could be redefined (e.g., DVORAK).

MBASIC.MOD describes modification of MBASIC definition of the delete key and default screen width.

The remaining files were submitted by Byron McKay.

MOVUSER1 will redefine the USER number associated with a given file. Also, see MOVUSER2 on FOG/UTL.019.

NCAT32 and XCAT36 are assembly language source files for the catalog programs found on FOG/UTL.012.

UNERA13 is an assembly language source file for the erased file recovery program found on FOG/UTL.009.

FOG/HAK.012

COMAND and DISKDEF are library files used by certain programs written in macro assembly language MAC. SEQIO22 is an update of the library file found on FOG/HAK.004.

FAST2 and PACKUP2 are disk I/O buffering routines.

MEMLNK20 simulates a disk in RAM.

MORSE, PRACTICE, and RANDTEXT all relate to morse code drill. They come from CPMUG.041. Also, see TEACH2 on FOG/APP.017.

TBPRNT13 is for tabulated printout of a file onto the CP/M list device. Also, see LISTT on FOG/UTL.015.

FOG/HAK.013

This disk contains several BASIC language business programs.

Included is part of the FINANCE system received from the Phoenix Osborne Group (PhOG). FINANC1A is on this disk; FINANCE2 and FINANCE3 are on FOG/HAK.014; FINAN1-3.DOC describes the system.

S&L performs various financial calculations. It should be verified before implementation in the Applications category.

The remaining files make up the BUSINESS system activated by running BUSINESS.BAS. Several of the calculations performed by this package are known to be incorrect; therefore, the entire system is suspect.

FOG/HAK.013

This disk contains several BASIC language business programs.

Included is part of the FINANCE system received from the Phoenix Osborne Group (PhOG). FINANCE2 and FINANCE3 are on this disk. FINAN1-3.DOC, which describes the system, and FINANC1A are on FOG/HAK.013.

Also received from PhOG is the STAR system, described by STAR.DOC. AUTOST.COM has been provided to automatically initiate STAR upon a cold start.

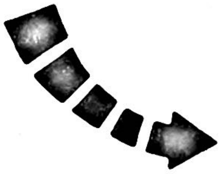
That completes the synopsis of new library disks introduced during March.

* * * * * * *

Your Bit Parade

by Jim Woolley

The reorganized FOG disk library of public domain software was introduced in September, 1982 and first listed in the October, 1982 FOGHORN (Vol. 2 No. 1). We will soon have more than 1000 separate files on over 100 disks. It occured to me that the newer members of FOG are probably overwhelmed by the thought of trying to find the most useful files from this treasure chest. Therefore, I decided to establish a list of "hits". but rather that inmpose my



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judgement of what is the most useful, helpful, fun, or unique, I would like you to tell me which programs, games, or informative files you like best.

Following is a simple form. Please indicate your choices for each category. Identify either a specific filename, such as SWEEP36.COM, or a system of programs , such as the disk catalog system. You need not fill out the entire questionaire, nor do you have to use this specific form. The results will be compiled, published in the FOGHORN, and recorded in the library. Every few months, we'll ask you to update Your Bit Parade.

Your Bit Parade:

Indicate your FOG disk library favorite by category.

GAMES (-FOG/GAM.): 1. ____________________
2. ____________________ 3. ____________________
4. ____________________ 5. ____________________

UTILITIES (-FOG/UTL.): 1. ____________________
2. ____________________ 3. ____________________
4. ____________________ 5. ____________________

APPLICATIONS (-FOG/APP.): 1. ____________________
2. ____________________ 3. ____________________
4. ____________________ 5. ____________________

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4. ____________________ 5. ____________________

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LANGUAGES (-FOG/LNG.): 1. ____________________
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4. ____________________ 5. ____________________

HACKERS (-FOG/HAK.): 1. ____________________
2. ____________________ 3. ____________________
4. ____________________ 5. ____________________

Send to:

Jim Woolley
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Please mark your envelope "BIT PARADE".

NOTE: This is being rerun this month because of the very limited response to date. Please help our new members by sending in your favorites.

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FOG MERCHANDISE

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Our newest merchandise is the T-shirts with the FOG logo. These T-shirts are soft Osborne blue in color and are Hanes 100% cotton. They are cut large to allow for shrinkage. Sizes available are small (34-36), medium (38-40), large (42-44), and X-large (46-48).

The price is $8.00 each (two for $15.00) for members and $10.00 each for non-members so be sure to include your membership number. Add $1.00 for shipping.

FOG has several software packages available for sale. SMARTKEY, SMARTPRINT, and the CP/M Extension Utilities were all reviewed in Vol. 1, Issue 10 (August, 1982).

One additional item has been added to the FBN Software line. This is a program called UNPROTECT. We hope to run a review in a later issue.

UNPROTECT is an 8080/8085/Z80 machine language program which runs under CP/M. Its purpose is to decrypt Microsoft BASIC (Release 5) files which have been saved in a protected format. It is hoped that anyone buying and using this software will remember that this program should only be used to correct errors in PROTECTed files of which you have a legal copy. Please bear in mind that piracy is both illegal and a sure way to reduce the software available for your use.

For those who have previously considered buying either SMARTKEY OR SMARTPRINT, there has been a price increase as shown below. This is due to a new marketing contract that FBN has with one of the major software distributors.

Prices on the software are as follows:

SMARTKEY only	$60.00
SMARTPRINT only	$35.00
SMARTKEY/SMARTPRINT	$85.00
CP/M Ext. Utility Pkg	$39.00
UNPROTECT	$29.00

We also have available a set of two cassette tapes which are designed for the new Osborne user. Created for a 1.2 rev. model Osborne, the tapes will be very helpful if listening to a step-by-step procedure is an easier way for you (or the family) to learn. The set of tapes are $25.00

We currently have a good inventory of the software, though we are a little short of the cassette tapes. However, the suppliers can normally ship within a couple of days.

We have one last item in our inventory. This is the "green" screen for the Tan cased machines. Made from green or orange plexiglas, the screens come with necessary mounting. The price is $5.50. Supply of these screens is limited to the stock on hand.

To order any of these items, please send your payment in an envelope marked " MERCHANDISE " to P. O. Box 3051, Daly City, CA, 94015. Please include your membership-account number. If shipment cannot be made within a week, your check will be returned. We cannot sell the manuals separately.

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"I Can Use My Computer!"

for the new Osborne 1 or other CP/M computer owner

Sit in on Jeffrey showing D.J. her first computer. You'll start from turning on the power, make the CP/M operating system serve you, and go on to use WordStar, SuperCalc and write your first BASIC program. At each step the screen is described while the operation is explained. Those crucial "little details" hidden in the manuals are all here, because this is an actual session. You'll handle disks, run the printer and absorb lots of information easily — the emphasis is always on using the computer. Save yourself costly hours and frustrating dilemmas. Soon you'll say, "I can use my computer!"

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Two C-90 cassettes in Dolby stereo

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FBN Software SMARTKEY $60.00

This is one of those programs that I really didn't know if it would be useful to me, at least not until I started to experiment with it. SMARTKEY lets you adapt your keyboard to any configuration you like. It's like having every key on the keyboard programmable just like the number keys are through the SETUP program - only the functions of the keys can be changed dynamically, from the keyboard, at any time you want!

One of the OSBUG members has his keyboard laid out like a DEC typesetter. I use it to remember filenames and key words for recall at the touch of a button! SMARTKEY takes up 2k at the top of memory below CP/M, and once in place is "transparent" to the user. You won't even know it's there unless you call it. It can also load the key values from a file in memory, letting you keep an 'automatic' key definition file on each different disc that loads when you boot the program. For those of you who wanted to try the Dvorak keyboard layout, this program makes it easy.

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FBN Software SMARTPRINT $35.00

This program is similar to SMARTKEY, but works at the other end of the chain, the printer. It allows you to redefine the codes sent to the printer by your computer. You could us this utility to set up two different printers so they respond the same way to the same keys, or to adapt timing sequences on for some printers easily (once again, a software solution!). You must have SMARTKEY to make this package work!

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FBN Software - CP/M Extension utility package $ 39.00

There are seven programs on this disk! SPOOL lets you assign output that would normally go to your printer or screen to a disc file instead. All output is then successively added to that disc file. Now this doesn't sound like much of an advantage, does it? Except that now you can print that disc file using UNSPOOL, and it can be printing while you do something else on your console. It takes a lot less time to write to a disk file than it does to a printer (especially if it is an Epson like mine). You also have all your documents printed at one time while you go about housekeeping in CP/M.

I know you could just get an 8k buffer card for your printer, but this way it's much less expensive. Besides, it's cheating to do it with hardware!!

⇨ ⇨ ⇨ ⇨

If you assign the console (screen) output to the disc file, you can get a complete master disc file catalogue by using successive XDIR commands, or even a dissassembly of .COM files on disc. There's even a disassembly editor utility, DDTTOMAC, that edits a disassembly listing produced by DDT so it is compatible with a normal assembler. (If you're a beginner, don't worry about this. It will only be of use to assembly language programmers. Don't laugh - when I started I was as much of a klutz at that as you think you are!).

RESTORE will bring back that file you just erased by mistake. You know, when you forgot to start the ERA command with "B:" and you just erased the new edited version of your file on the logged disc. Just go to CP/M and say RESTORE <filename> and there it is — back again! Just like magic! What's that? You have a file that was erased but you can't remember it's exact name? Never fear - FDIR is for you! This directory utility will give you the name of all files on the disc, their user number (or 'erased' if they have been erased), the attributes of the file, and it's size (in extents).

To keep your directory in order, SORTDIR will re-arrange it, putting it in name or type order, and erasing PERMANENTLY any previously erased files. This makes it much easier to recover an erased file later with no problem due to name conflicts, and makes your files nice and neat when you use DIR.

The final utility is called QSUB. It is another form of Submit command. The primary advantage of QSUB is the ability to specify a string of commands on the command line of CP/M without having to use a separate .SUB file on the disc. (once again, I'm saving all the space on my disc that I can). This is great where you want to load two or more programs in succession, for example, SPOOL then WORDSTAR. The other advantage is that QSUB doesn't write a transient $$$.sub file to your disc, meaning QSUB will work in the direct command line mode even on a write protected disc!!!

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CONTACTS

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This section is is dire need of help from all of the members. The complete list as it exists today is the combination of the list below and the lists in the January, February, and March issues of the **FOGHORN**. There are very few duplications. BUT THIS IS NOT ALL OF THE GROUPS WHICH SHOULD BE LISTED HERE. Only if each of you will take a few minutes to read through these [redacted] lists and then drop me a note listing any details you may have about groups that are missing. I will sort out the duplications and any partial information you may send in — I would rather have too many than miss a group.

Please send any information you have to P. O. Box 3051, Daly City, CA, 94015. Mark the envelope " CONTACTS ". Thank you for your assistance.

Renewal notices have gone out for everyone who has or will expire by 5/31/83. Please give this notice prompt attention so that you don't miss any of the issues of the ***FOGHORN***. Unless we receive your renewal payment shortly, this could be your last issue. If there is any doubt, check the label on this issue.

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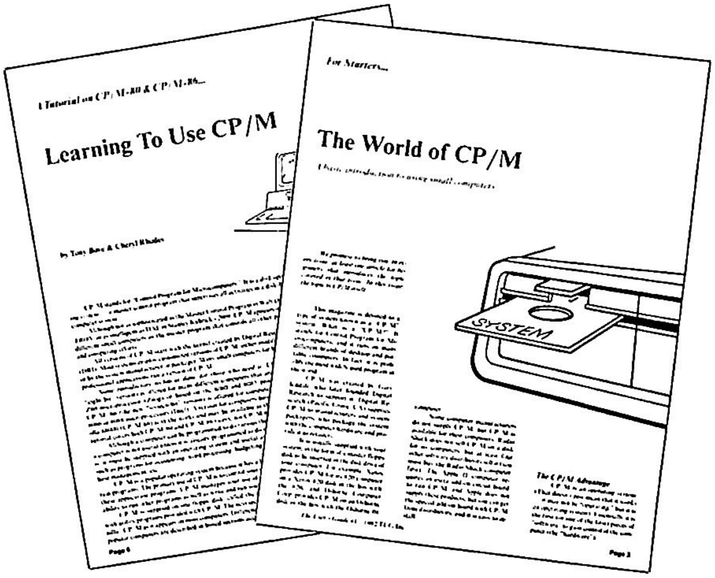

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